FRIDAY, MAY 5, 1876.

Newcomb's Car Replacers.

Among the railroad implements to be exhibited at the Centennial are the car replacers herewith illustrated. They are the invention of Capt. E. Newcomb, Road Master of the Portland & Ogdensburg Railroad, and have, for the past two years, been in use on that and other roads, both of this country and Canada.

The cut shows a set of them in position for replacing a pair of wheels which are derailed, and, although shown very clearly in the engraving, it may be well to give a short description.

The inside piece, or frog, has a base of wood covered with boiler iron, to which are riveted two supplemental rails or bars. These bars rise to the height of the track rail, but taper downward at the ends to form hooks for engaging the ties. Between these bars is a wedge-shaped tongue of wood, which swings on a pivot at its larger end. Its sides are slightly bevelled, and are well protected by iron. The short cross-bar attached and sliding beneath the hooks makes it self-adjusting.

The outside piece is also of wood and covered with iron. It is a double inclined plane, rising higher than the rail and also sloping towards it. The iron is held by rivet-headed bolts, which end in points below to prevent slipping on the ties.

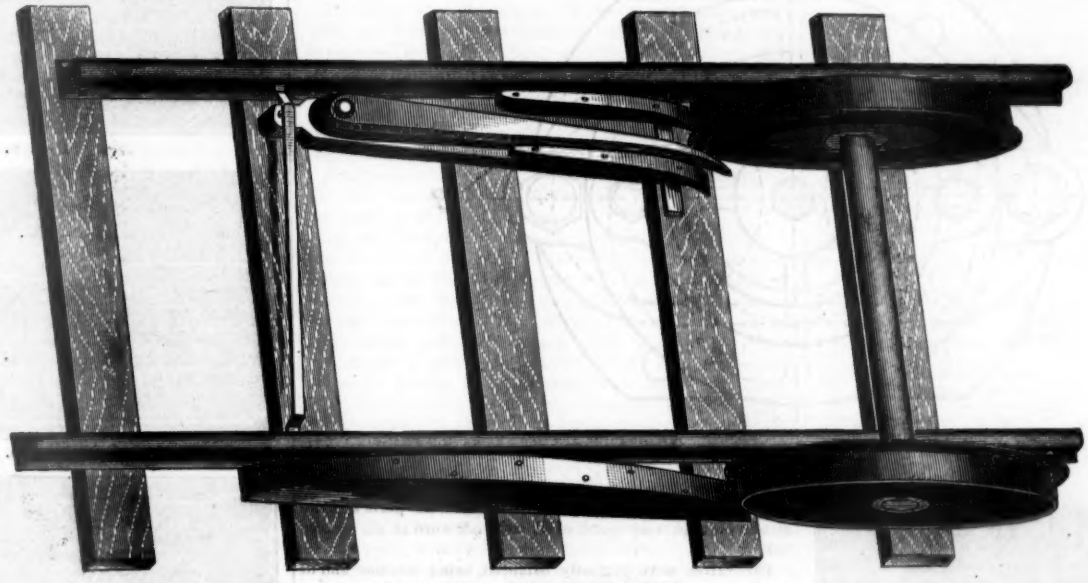
The inside wheel runs up on the bar nearest the rail, and is pushed over by the tongue as it advances. The light brace between the rails prevents the frog from swinging away from the track.

The outside piece raises the other wheel high enough to clear the rail, and the frog pulls it over.

The prominent feature of these replacers is that they do not hook over the rails, and thus not only leave the track clear, but also remove all danger of throwing the misplaced wheels off on the other side of the track, instead of replacing them. In fact, they do not raise the wheels any higher than is absolutely necessary to replace them on the rails, and hence there is no liability of their failing to do the work.

The advantages claimed for them are simplicity, cheapness of construction and ease of adjustment.

The inventor's address is Cumberland Mills, Maine.



NEWCOMB'S CAR REPLACERS.

Improved Target for Leveling Rod.

ARCADE, Wyoming County, N. Y., April 3, 1876.

TO THE EDITOR OF THE RAILROAD GAZETTE:

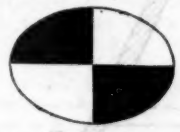
In your issue of March 24 you give drawings and description of a new leveling rod target. This is very well in *theory*, but in practice how is the leveler to get his rodman to hold his rod plumb?

I see no way unless he has a plumb, or, which is better, a spirit level to use on his rod; and if he uses one, then such a target is unnecessary.

While on the subject of targets I have a better form of painting one than the ordinary 4-spot target.

Paint it with six spots, thus:

The disadvantage of the former is that in getting a *close* sight or reading, and the rod should lean to the left slightly, with a target painted thus:



he appearance of the horizontal cross-wire would come on the dark part, and the observer would be at a loss to know whether it was on or off the horizontal line on the target; whereas in the six-spot target if it leaned to the right or left the horizontal cross-wire would always be seen across the white on the target.

H. B. ALLEN, C. E.

Fast Time.

[Mr. John C. Ellis, President of the Schenectady Locomotive Works, sends us the following letter and record of the time made by one of the engines built at these works]:

SYRACUSE, April 25, 1876.

JOHN C. ELLIS, Esq., President Schenectady Works:

DEAR SIR—I inclose record of fast time made by No. 266, March 25, going west with fast mail train consisting of four postal cars. The card time from here to East Buffalo, 148 miles, is 3 hours and 35 minutes, and makes during the trip three stops—at Palmyra, 58 miles from here, for water; at Rochester, to change mail; and at Batavia for water. You can see from the record that she ran up in three hours, making up 35 minutes' time.

April 20, No. 266 left Syracuse very much behind time. She made the run to Buffalo in three hours.

Left Syracuse, 1:59; arrived Rochester, 3:36.

Left Rochester, 3:40; arrived at East Buffalo, 4:50.

Card time is to leave Syracuse 11.25 a. m. and arrive at East Buffalo 3 o'clock p. m. Yours truly, H. WATKEYS.

PERFORMANCE OF LOCOMOTIVE ENGINE 266, FAST MAIL, MARCH 25, 1876.

STATIONS.	Time.	Miles between stations.	Total miles.
Syracuse	11:50 a. m.	....	....
Warners	12:02 p. m.	9.36	9.36
Jordan	12:10 "	7.70	17.06
Weedsport	12:14 "	4.55	21.61
Port Byron	12:18 "	3.20	24.81
Savannah	12:25 "	7.06	31.87
Clyde	12:32 "	6.03	37.90
Lyons	12:39 "	7.11	45.01
Newark	12:45 "	5.54	50.55
Palmyra	12:56 "	7.43	57.98
	12:58 "		
Fairport	1:12 "	12.77	70.75
Rochester	1:25 "	10.07	80.82
	1:28 "		
Cold Water	1:38 "	6.50	87.32
Bergen	1:49 "	11.75	99.07
Byron	1:59 "	7.25	106.32
Batavia	2:10 "	7.50	113.82
	2:12 "		
Crittenden	2:31 "	15.75	129.37
Grimesville	2:41 "	9.75	139.12
East Buffalo	2:50 "	8.50	147.62

Showing an average speed of 49.21 miles per hour for the whole distance.

Concerning this trip the Buffalo *Sunday Courier* says:

"Yesterday, L. C. Hart, engineer of engine 266 on the Central Railroad, ran the fast mail, consisting of four cars, from Syracuse to Rochester, 81 miles, in 85 minutes, stopping once for water. His time from Rochester to Buffalo, 69½ miles, was made in 85 minutes, including a stop at Batavia. He left Syracuse 25 minutes late, and came into Buffalo 10 minutes ahead of time. This is the best time on record, and the fast mail poets will please make a note of it, and remember Hart and 266."

Experiments with Balanced Valves on Locomotives.

NEW YORK, March 16, 1876.

TO THE EDITOR OF THE RAILROAD GAZETTE:

An article was published in your paper of the 28th of January giving some of the reasons why balanced valves have failed when used upon locomotives. As per your request, I will endeavor to give you the benefit of some of my experience in their use, showing how they were affected and the measures I was obliged to resort to in order to make them a success.

In the year 1861 I invented and obtained a patent for improvements in piston valves for steam engines, and after several years of quite extensive and successful use of them upon stationary and steam-boat engines was led to make a trial of them upon a locomotive, expecting, of course, that their use would not only enable the engineer to handle his engine much more easily, but also to effect a saving in the wear and tear of the valve motion by reducing the friction of the parts, and consequently a saving in fuel.

The first trial was made upon a coal-burning locomotive freight engine, and was at first a success, all my anticipations being realized. But after running about six months, the valves leaked so badly that it was necessary to rebore the cases and put in new valves. It was noted that the wear was almost entirely on the bridges between the cylinder port and the exhaust. After repairs had been made the engine ran again about six months, when the valves were found in as bad a condition as before; and as no allowance had been made in the case for repeated boring, they were condemned and removed, the slide valve being replaced. The wear was as before, between the cylinder port and exhaust. Before the valves on the first engine had been condemned another set had been put into a heavy coal-burning freight engine, which ran six or eight months, giving perfect satisfaction, especially to the engineer, until they too had to be removed, the wear being in the same bridges between the cylinder ports and exhaust.

The above-mentioned trials were made upon ordinary slide-valve cylinders, the valves being removed and a case for the piston valves being fitted over the ports in the valve face; and they worked very well indeed, except that they would wear out.

For the next trial we made the cylinders for our purpose, the valve case and cylinder being in one casting and arranged in the best manner, as we understood it, to obtain the best results. This was a passenger coal-burning engine, and seemed for a time to be just right; but after some months the same trouble showed itself: the valves required repairs, and after about two years' work were condemned and new cylinders with common slide-valves put in their place. This ended our experiments in that direction, and piston valves were abandoned until something could be done to overcome the fault we had discovered.

Some time, perhaps a year, before the last engine was altered, and we had come to the conclusion that it would not do to put balanced valves upon locomotives, we had built a small tank engine for switching purposes, the cylinders of which were also made on purpose for the valves. After it was running, and having found the cause of the difficulty, orders were given that this engine should be run with an open throttle always. This overcame the difficulty, and the engine ran well and worked very satisfactorily, no repairs having been made to the valves for two years or more.

We had now found out the effect. What was the cause, and how could it be remedied? The effect was that the inside bridges between the cylinder ports and the exhaust were very much

Contributions.

The Proposals for the 800,000 lbs. Testing Machine.

TO THE EDITOR OF THE RAILROAD GAZETTE:

We read with considerable interest the article which appears in the *Gazette* of April 14 in reference to the "Testing Machine Appropriation," as asked for by the Board of the Society of Civil Engineers. The public generally and those who sent in proposals especially would doubtless like to know whether certain requirements and regulations are being complied with, as proposed by the committee who were appointed to purchase the machine in question.

It is almost a year since proposals were solicited for a testing machine with a capacity of 800,000 lbs., to be taken back in part payment for one of 2,000,000 lbs. which would be required in a *short time*. The first machine was to be built in *five months*, and in the event of the machine not being completed within that time, the successful bidder was to pay a penalty of $100 per diem for every day thereafter until the completion of the contract. We would inquire, through the columns of your excellent paper, if this charge is being paid by the contractor? as it should be, for we doubt not but that it would have been exacted from whomever might have received the order, in the event of their not coming up to time. If the builders (who appear to be experimenting, and have failed to complete their contract within the required time) are escaping their penalty, we would regard it as most unjust, and think the public should be fully informed about the whole matter, and insist that every particular of the contract should be carried out to the letter.

M. T.

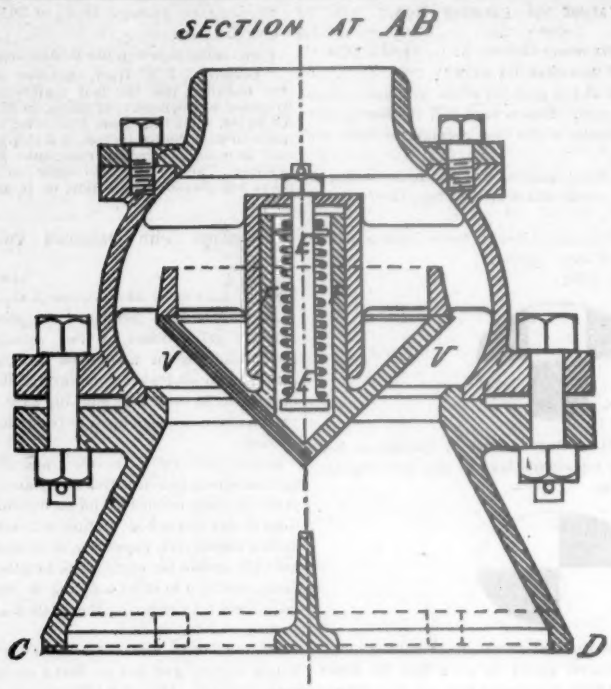


Fig. 1.

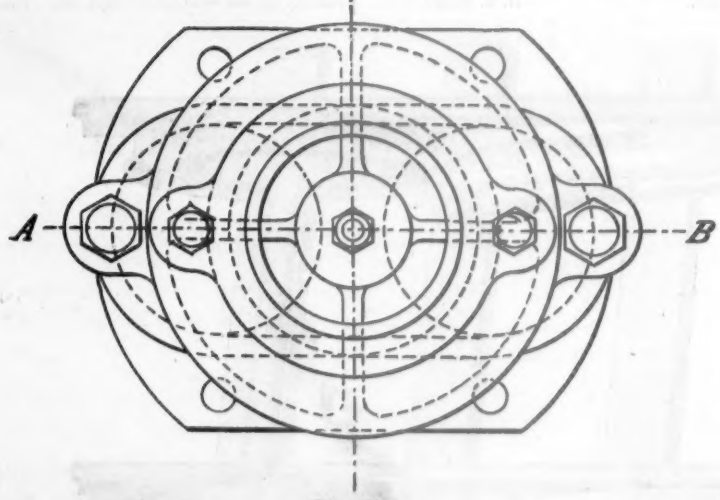


Fig. 2.

Fig. 3.

Fig. 4.

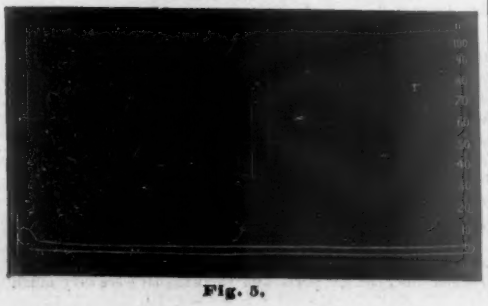


Fig. 5.

worn, while the bridges between the cylinder ports and the steam were in very good order and not worn at all, or very little.

The valves were perfectly balanced, being circular and of equal diameter. The areas of the outside ends of the piston valves were equal and balanced in that direction; so were the inside areas where the exhaust takes place. The ports were carried entirely around the valve and had no bridges, so that the pressure due to compression came upon the outside of the valves all around their circumference. There could be and was no tendency to wear in any direction, except that due to the weight of the valve itself. The valves themselves did not show wear of any account. The bridges only were worn, and only the inside bridges. There could be but one cause for this wear — the dirt from the smoke-box. And how could it be prevented? Simply by avoiding the creation of a vacuum in the cylinders, running with an open throttle, or drilling a small hole in the throttle valve to admit steam to the cylinders when the main ports of the throttle were closed. Either of these devices would do this, but both were objectionable, so I was forced to find some other way, and the valve in the exhaust pipe was the next arrangement. This valve must be made light and of proper shape, so that it will not interfere with the blast or increase the back pressure, and be made so strong that it can stand the hard work. It must open to the exhaust and close tight to the atmosphere; and above all things it must be self-acting, as the engineer has enough other things to look after; and although it looks and is simple enough, it has taken a long time, considerable money and a great deal of patience to make it a success. I have made the valves of brass, of wrought iron, of steel, and of cast iron, and all except those of cast iron have failed. They would hammer to pieces in a very short time. This, I discovered very early, was due to improper construction. Even the poorest of them lasted long enough to show that the blast and back pressure were not affected to any great extent, that we could stop the train with the engine easily without pumping air into the boiler, and that they would close up the exhaust pipes perfectly. It only required, to insure success, that the valves should be made to last. This I am satisfied I have accomplished, and am now ready to put them with the balance valve upon any railroad at my own expense, and guarantee success or no pay.

Inclosed herewith I send a drawing of the valve as now made. Fig. 1 is a section and fig. 2 a plan.

The bottom casting, *C D*, the upper surface of which forms the seat for the valve, is made of proper shape and size to cor-

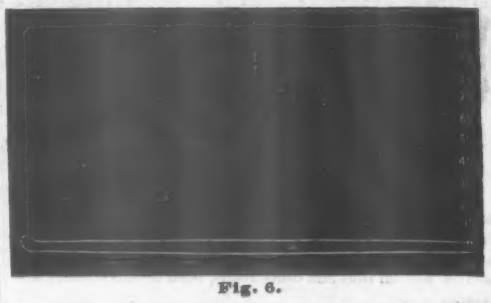


Fig. 6.

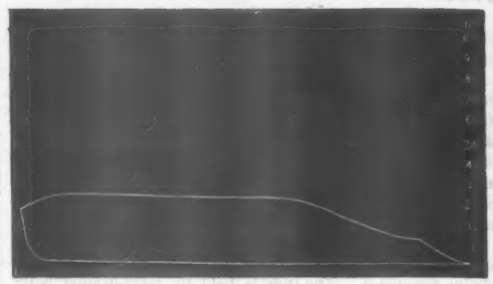


Fig. 7.

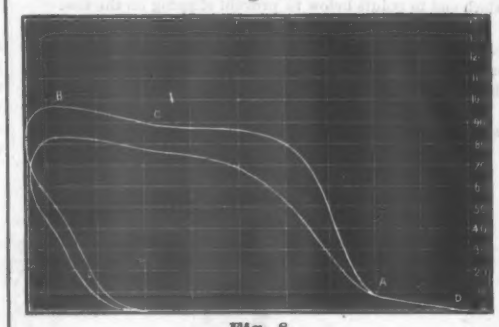


Fig. 8.

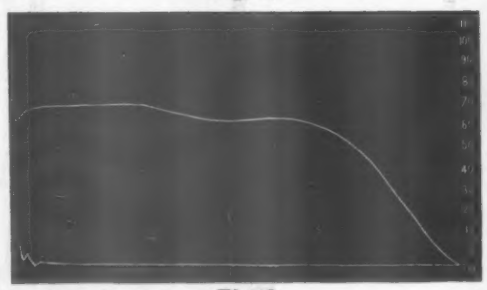


Fig. 9.

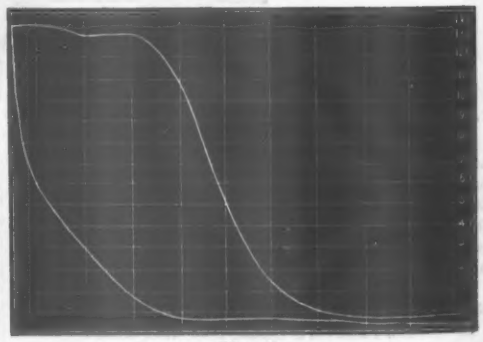


Fig. 10.

Fig. 11.

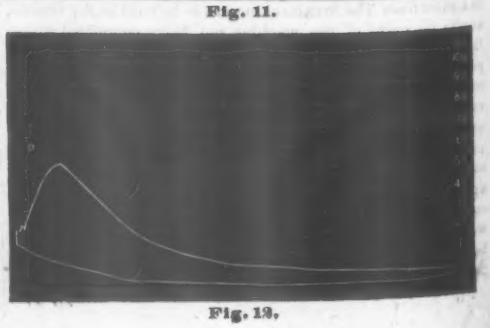


Fig. 12.

respond with and fit upon the ends of both exhaust pipes, and is secured in place by bolts passing through the lower flanges. The valve, *v v*, is of cast iron, and conical in form on the lower side where the steam strikes it, and it has a hollow spindle or guide, *F F*, on its upper side. The spindle, being hollow and inclosed, forms a protection for the spiral spring *E E*. The spring is made of sufficient strength to balance the weight of the valve, which, when in a state of rest, should stand off its seat about one-eighth of an inch. All the passages to and around the valve are made sufficiently large to give the full opening of the exhaust pipes, with ample allowance for friction, the smallest area being in the nozzle directly over the valve. The drawing shows the valve wide open. Made in this way, I find that the valve closes instantly and easily, and is not thrown with violence against the stop at the top. After running one of them daily for five weeks, on examination, the valve and its seat were just bright, but were not worn enough to be felt or measured, while the upper surface of the valve and lower surface of the stop were not bright, showing that the valve had not been against the stop at all, or, if it had, the contact was so slight as not to show.

Having shown the construction of the arrangement, it now becomes necessary to prove to you that it performs its functions properly; and, as you remark, this is not an easy thing to do unless an engine can be had to experiment upon, with permission to make such alterations as would be necessary to a successful issue. All the tests made so far have been under the most unfavorable conditions.

I inclose a number of indicator diagrams, taken with many others from one and the same engine. They were taken from the engine while doing its regular duty, pulling a passenger train, without any special reference to the amount of work performed. I have some diagrams that show far better results, but these are the only ones I have that show the difference between running with the exhaust valve in the engine and with the double nozzle.

The exhaust valve used in this trial was not like the one shown in the drawing, it being of the shape of the bottom of a saucer, almost flat, unbalanced and defective in other ways.

The engine had cylinders 16 in. diameter and 24 in. stroke, and the lap of the valves covered the ports entirely, steam being admitted to the cylinder through a number of round holes drilled through the lap. No change was made in the valves, and for my purpose it was not necessary, as my principal object in this trial was to test the endurance of the exhaust valve, and to note its effect upon the back pressure and blast. The back pressure was increased somewhat, as the diagrams will show, and the blast was rather stronger than necessary. I had no opportunity to change the nozzle, consequently am unable to tell definitely whether the differences were due to the exhaust valve itself or to the size of the nozzle. The cylinder cocks were made in such a manner that, while they could be opened in the usual way to allow the water of condensation to be drawn off, they opened to the pressure of the atmosphere when there was a partial vacuum in the cylinder. This was against me, for the vacuum that it was desired to show was destroyed in a great measure by the admission of the air through the cocks. The engine was originally fitted with double nozzles, each 2⅛ in. diameter, while the nozzle on the exhaust valve was single and 3¼ in. diameter.

The boiler pressure ranged from 110 to 130 lbs. during the tests, as shown by the steam gauge.

The indicator used was one constructed by D. P. Davis for high speeds and makes a circular diagram. As it was necessary to reduce the diagrams, I thought it best to make them in the common form, being more easily interpreted by those not familiar with the circular diagram. The diagrams have been selected with reference to having them under the same conditions of work with the exhaust valve and the double nozzle, as nearly as possible.

Diagram fig. 3, with the valve, and fig. 4, with the double nozzle, were taken at a speed of about 35 miles per hour and boiler pressure of 130 lbs. It will be observed that fig. 3 shows somewhat more back pressure than fig. 4, and also that the steam line in fig. 4 is much higher than in fig. 3. A difference in speed of two or three miles per hour would, I think, fully account for all the difference shown in the back pressure line.

Diagrams figs. 5 and 6 were taken with the lever in full gear forward motion and the throttle closed, the engine approaching a station at a speed of 10 to 15 miles per hour. These diagrams were taken for the purpose of showing the vacuum formed in the cylinder at such time. It will be observed that diagram fig. 5 with the exhaust valve shows that the pencil followed the zero line in the back stroke nearly the whole length, while in diagram fig. 6 with the double nozzle it followed above the lines all the way. Had the cylinder cocks been closed tight, diagram fig. 5 would have been made entirely below the zero line.

It will also be observed in diagram fig. 6 that the vacuum valves which were used in place of cocks in the cylinders, for the purpose of allowing the atmosphere to enter in order to destroy the vacuum, and prevent the dust from being drawn in through the exhaust pipes, although they were about equal to a hole ⅛ inch diameter, were not sufficiently large to effect the purpose, as the diagram shows a vacuum of nearly 5 lbs., and about the same result is shown in diagram fig. 12. Diagrams figs. 7 and 8 were taken with the lever in full gear reverse motion, throttle closed and the engine running ahead, the only difference being in the speed of the engine. In diagram fig. 7 with the exhaust valve the engine and train were running at the rate of 20 to 25 miles per hour; but diagram fig. 8 with the double nozzle was taken in the yard when the engine was backing down to its train. The original diagram has three lines, one midway between the two seen in the diagram which shows that the speed was decreasing very rapidly at every revolution, in fact the engine made but two or three revolutions after the diagram was taken before she came to a full stop.

As some of your readers may not understand the reverse motion diagrams fully, I will make an explanation of them. It will be remembered that these diagrams were taken with the lever in reverse motion. Consequently the movement of the pencil on the diagram is reversed, and the valve opens for the admission at *A*, fig. 8, and for the release at *B*, and closes again on the release at *D*.

The depression in the line at *C* is caused by the opening of the valve for the admission to the opposite cylinder. The pressure shown in these diagrams is due to the compression of the atmosphere taken in through the exhaust pipes in diagram fig. 8, and through the cylinder cocks in diagram fig. 7.

In diagram fig. 8, the atmosphere is compressed to 98 lbs., although the engine was moving at so slow a speed. But in diagram fig. 7, there was only 26 lbs. pressure and a vacuum of 8 lbs., although, as before stated, the engine was moving at a speed of 20 to 25 times the rate in diagram fig. 8.

I claim that with the cylinder cocks closed tightly the diagram would be made nearly if not entirely below the zero line.

Diagram fig. 9 was taken with the lever in full gear, reverse motion and the throttle slightly open. This diagram is very similar to fig. 7, except in the amount of pressure due to the throttle being slightly open.

Diagram fig. 10 was taken with the lever in reverse motion, 16-inch notch, with the throttle wide open. In this diagram it will be observed that the pressure is shown somewhat above the boiler pressure, which was 130 lbs. This can be readily seen on the steam gauge, as the pointer will vibrate from 10 to 15 lbs. during the time the throttle is open.

Diagram fig. 11 is also in the reverse motion and 10-inch notch, with the throttle about half open, taken approaching a station at a speed of 10 to 15 miles per hour.

Diagram fig. 12, double nozzles, with the lever in centre notch, throttle closed. This diagram was taken for the purpose of showing the difference between leaving the lever in the centre notch and dropping it down in full gear when shutting off the throttle; and it will be observed that the vacuum is somewhat more than in diagram fig. 6, and also that the compression is much greater.

This shows why the engine will stop so much more quickly when the lever is put in the centre notch than when dropped down in full gear.

I think that these diagrams prove conclusively that my theory is correct, that the locomotive engine provided with the exhaust valve, or any other device that is equivalent to it, can be reversed with impunity, and the power that is in the engine used to hold the train or stop it as well as to pull it.

Every railroad man knows that the engine does nothing now but pull the train, and the brakes upon the cars have to stop the engine as well as the train.

Again, I think it is very clearly shown by card fig. 7 that the vacuum is about 8 lbs., and I have other diagrams taken from another engine with piston valves, with the cylinder cocks the same as in the above case, only somewhat smaller, and the vacuum is shown in them below 12 lbs. If the cylinder cocks could have been closed tight, there is no reason why we should not have had very nearly a perfect vacuum; and as the vacuum is formed immediately on reversing the engine, there is no good reason why it cannot be made use of to set the brakes on the cars whenever required. I would then not only have the brakes set by the engine, but have the whole power of the engine as well, to help stop the train.

I often read in accounts of railroad accidents that the engineer immediately reversed his engine upon discovery of the impediment, but the engine, being immediately disabled, was consequently powerless to avert the disaster.

Using the exhaust valve, no damage can be done to the engine from reversing at any speed, for the pressure cannot be increased much if any above the boiler pressure, and the strain upon the parts is no more than it is in pulling the train with full boiler pressure.

I have met with a great deal of opposition to this theory from engineers, from the simple fact that they all know the danger attending the reversing of the engine as now built, at any considerable speed. Everybody knows that locomotive runners will not reverse their engines until satisfied that it is a case of life or death, and then in most cases it is too late to prevent disaster.

If engineers can be convinced that the engine can be so modified that they can reverse it without danger to it or to themselves, they will be the most interested of all men in making the necessary changes.

In the last trial made, where the exhaust valve was similar to the one shown in the drawing, and with piston valves, I obtained diagrams in which the back pressure is very much less than is shown in these diagrams, so much less that I believe I am justified in saying that the valve in the exhaust pipe need not increase the back pressure or interfere with the blast in the least. But this trial was also made under many unfavorable conditions. I had no opportunity of taking diagrams from the engine before the valves were put in, nor was I allowed to put in cylinder cocks that could be closed, and consequently am unable to show the vacuum that I so much desired to show, and there were many other obstacles in the way of my getting an actual show of the results.

THOS. S. DAVIS.

No. 46 COURTLANDT STREET, New York.

The Railroad Contest.

The following letter was addressed to the New York Central managers, and it is understood that an unfavorable answer was returned, the company apparently preferring to have the low rates continue to negotiations as proposed under the present circumstances:

NEW YORK, APRIL 27, 1876.

Commodore C. VANDERBILT, *President*, W. H. VANDERBILT, *Vice-President, New York Central & Hudson River Railroad Company.*

GENTLEMEN: Believing that the existing differences in regard to the transportation of east-bound traffic are not understood as thoroughly as they should be, and that these differences should be adjusted on a basis of equity to all interests, we have through telegraphic correspondence requested Mr. Hickson, of the Grand Trunk line, and Gov. Smith, of the Vermont Central, to meet us in New York and talk the subject over, to see whether we could not arrive at some satisfactory basis of adjustment. We believe that your shorter line between the West and New England ought to make a reasonable concession to the Grand Trunk route, which embraces that line, the Vermont Central, and other connections, owing to its location and climate and other causes incidental to it as a through route.

In order to protect and promote the interests of the various roads of the country, as well as the best interests of the public, we trust you may find it your interest to agree, if it can be arranged, to allow the Grand Trunk route the following scale of differences on east-bound traffic to competitive points in New England, which are much less than those heretofore existing, and which we deem, under the circumstances, to be reasonable:

On live stock, 7 cents; on cut meats and perishable property, 6 cents; on first and second class, of which there is but a very limited quantity, 14 cents.

The Grand Trunk to carry third and fourth class, which embraces 90 per cent. of the entire traffic, at equal rates, as fixed from time to time. The matter of west-bound rates from New England to remain as adjusted between your line and the lines of the Grand Trunk route.

Looking over the whole ground it seems to us that if we can prevail on Mr. Hickson to agree to this schedule, you should agree, as well for your own interests as those of all the other lines in the country, to make this adjustment, and if it is made, that the Grand Trunk route should then become one of the Eastern trunk lines, and be a part of the organization for making and adjusting rates and classifications from time to time, on the general basis that has prevailed among the four trunk lines during the past year. By adopting this policy its result must be to protect large amounts of property owned in this and other countries from a destruction that we think, under the circumstances, is not warranted, and we believe that the adjustment of this whole matter rests entirely with you. The pending consequences are in our opinion so serious that we must respectfully request you to give us an answer by Saturday morning of this week. If you will address your reply to us to the care of Mr. Jewett, at the Erie Railway office, we shall be glad to co-operate to the end that an adjustment of existing and anticipated difficulties may be reached and destructive competition be avoided.

Very truly yours,

THOMAS A. SCOTT, Pres. Penn. Railroad;
H. J. JEWETT, Pres. Erie Railway Co.;
JNO. KING, Jr., Vice-Pres. B. & O. R. R.

THE SCRAP HEAP.

Railroad Manufactures.

The Jackson & Sharp Company, at Wilmington, Del., has just completed a number of light narrow-gauge cars for the West End Passenger Railroad Company's road in the Centennial grounds. They are open cars of very light construction, and will seat 96 passengers each.

The Wheatland (Pa.) Rolling Mill and blast furnaces were offered at public sale a second time last week, but were withdrawn, as no bid over $150,000 was made for the property. It will probably not be offered at public sale again, but an attempt will be made to dispose of it at private sale.

Jones & Laughlins, of the American Iron Works, Pittsburgh, are manufacturing 18,000 fish bars for the Pennsylvania Railroad Company. They are 32 inches long and weigh 25 pounds.

The Patten Car Works, at Bath, Me., have secured a heavy contract for passenger and freight cars for the Intercolonial Railway.

The Rhode Island Locomotive Works have completed 18 flat cars, built of iron, on the La Mothe patent, for Barnum's circus.

In the long suit between the Pennsylvania Transportation Company and the Oil Creek & Allegheny River Company, the former corporation has obtained a verdict for $197,000 in the Circuit Court at Meadville, Pa. The suit was for breach of contract.

The Highest Locomotive Speed.

The *Railway Service Gazette* (of London) says:

"A correspondent of the *Railroad Gazette*, of America, inquires, in a recent number, what is the highest speed ever attained by a locomotive in England, and what is the highest speed attained in the United States? The editor does not give a direct answer to the question, on the ground that it is extremely difficult to ascertain with exactness the speed of a train running very fast. He says that the accounts of fast running which are usually published are generally vague reports, for which no one is responsible, and the correctness of which it is impossible to verify. We may state, for the information of our contemporary, that it is absolutely certain that for some distance trains run every day at the rate of 70 miles an hour on English railways. This is proved by the time allowed in the books of the companies for running between specified points. It must not be inferred from this that in any case a distance of 70 miles is booked to be covered in 60 minutes; but that a distance of 40 or 50 miles is booked to be run in something like the same number of minutes, and when the time lost in getting up speed, and reducing it at places where it has to be reduced, is taken into account, the speed is shown to be about 70 miles an hour for a considerable portion of the journey. It is well known that the United States railroads are not constructed with that stability which characterizes the railways of the United Kingdom, and therefore trains cannot be run at a great speed over them. In the United States it is only in the vicinity of the great cities that a speed of over 50 miles can be attained with safety, and perhaps this is the reason why the editor of the *Railroad Gazette* (with laudable patriotism) avoided a direct reply to his correspondent's question."

The *Railway Service Gazette* does nothing to answer our correspondent's question. He does not ask for instances of high speed here or in England, but for the *highest speed ever* attained in either country, just as one might ask what is the best time ever made by a horse. An inspection of the schedule of the "Bennett special train" over the New York Central, published recently, will show that locomotives do not always loiter on American roads, as does our experience with the "fast mail," which for many months has made regularly a daily run of 440 miles in 10 hours and 45 minutes.

The Fastest Locomotive Speed.

The *Engineer* says: "The following are the highest authentic instances of high railway speeds with which we are acquainted: Brunel, with the courier class of locomotive, ran 13 miles in 10 minutes, equal to 78 miles an hour. Mr. Patrick Stirling, of the Great Northern, took, two years back, 16 carriages 15 miles in 12 minutes, equal to 75 miles an hour. The Great Britain, Lord of the Isles, and Iron Duke, broad-gauge engines on the Great Western Railway, have each run with four or five carriages from Paddington to Didcot in 47¼ minutes; equal to 66 miles an hour, or an extreme running speed of 72 miles an hour; the new Midland coupled express engines running in the usual course have been timed 68, 70 and 72 miles an hour. The 10 A. M. express on the Great Northern, from Leeds, we have ourselves timed, and found to be running mile after mile at the rate of a mile in 52 seconds, or at 69.2 miles an hour. The engines used are Mr. Sterling's outside-cylinder bogie express engines, the load being 10 carriages."

RAILROAD GAZETTE

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CONDUCTED BY

S. WRIGHT DUNNING AND M. N. FORNEY.

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Editorial Announcements.

Passes.—*All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.*

Addresses.—*Business letters should be addressed and drafts made payable to* THE RAILROAD GAZETTE. *Communications for the attention of the Editors should be addressed* EDITOR RAILROAD GAZETTE.

Advertisements.—*We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay,* EXCEPT IN THE ADVERTISING COLUMNS. *We give in our editorial columns* OUR OWN *opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.*

Contributions.—*Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to* ALL DEPARTMENTS *of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.*

THE PACIFIC RAILROADS' DEBT TO THE GOVERNMENT.

The Government advances to the Pacific railroads, being the principal of the second-mortgage bonds and the interest which will accrue until the principal is due, will form an enormous debt due from the companies to the Government, and maturing near the close of this century. The law now provides that the only yearly payments required from the companies shall be one-half of the dues for Government transportation and 5 per cent. of the yearly net earnings. A suit was recently decided by the United States Supreme Court which settles the fact, we believe, that the Government cannot claim any payments for interest advanced until the principal is due; and therefore must not withhold more than one-half of the sums accruing for Government transportation as a sets off for the interest advanced. Another suit is pending to settle the time when the payment of 5 per cent of the net earnings should begin, and also what the law means by "net earnings." The Government claims that it is used in its usual acceptation among railroad companies to denote the balance left after substracting working expenses from gross receipts. The company holds that interest on the funded debt as well as working expenses must be taken from gross receipts to find the net earnings contemplated by the law. When this suit is decided the exact relations of the companies to the Government will be established, and a tolerable estimate can be made of the amounts payable to the Government yearly from the companies, and of the amount of the debt that will be due when the bonds mature, which will be the principal of those bonds plus the difference between thirty years' simple interest and the sum of the yearly payments of 5 per cent. of net earnings and half the earnings from Government business for that time. A rough estimate of the amount of the debt in the case of the Union Pacific makes it about $50,000,000, due from 1895 to 1898, about $22,500,000 of it being the accrued interest. The whole outstanding principal of these subsidy bonds to all the Pacific railroads is $64,623,512, on which the interest advanced by the Government and not repaid to it by transportation was, on the 1st of June last, $20,147,505. On the basis of the estimate for the Union Pacific, the total interest due when the bonds mature will be about $52,900,000, making the total debt due by the six subsidized companies to the United States near the close of this century about $117,500,000, if no further arrangement is made as to yearly payments. This debt will be, as it is now, a second mortgage on 2,475 miles of railroad, and will amount to $47,475 per mile of road.

These figures are not to be taken as positive and definite. The only thing positive and definite that can be said of this debt is that the principal and accumulated interest for the thirty years the bonds have to run will amount to $180,945,834. The repayments provided for meanwhile by the law will vary with the amount of Government transportation and the net earnings every year. The estimate was made for the Union Pacific by assuming that its net earnings would not be less than in 1875 and the earnings from Government transportation equal to the average of these earnings for four or five years past. The estimate for the other roads was made on the assumption that their yearly repayments would be the same in proportion to the debt as those of the Union Pacific. It is not probable that the three smaller lines (Kansas Pacific, Central Branch, and Sioux City & Pacific) will make repayments at so great a rate, but their proportion of the whole debt is trifling, and considerable differences may exist without greatly changing the total of the principal and interest which will be due the Government when the bonds mature.

A debt of $45,000 a mile is a formidable thing; a good railroad can be built and equipped over pretty difficult ground for that in these days, and for half that on such ground as a large part of the Pacific railroads occupy. But the matter is greatly magnified by considering it as a debt already due. The roads owe no such debt now. On the average probably it will not become due for twenty-one years, which makes an immense difference as to its burdensomeness. The present value of $45,475, reckoning interest at 6 per cent., is only $13,720; at 7 per cent. it is only $11,192; and this is the measure of the Government lien on the Pacific railroads as it stands to-day. The investment of $13,720 per mile of road at 6 per cent. now as a sinking fund will retire the whole immense debt at maturity.

Recently the two great Pacific companies have made propositions to Congress concerning the establishment of a sinking fund to retire this debt. Somehow it seems to have been assumed on both sides that some new contract is needed to prevent ruin to both parties. But the intervention of the Government is in no degree necessary to enable the companies to provide, and to begin now to provide, for the payment of their debt at maturity; and, indeed, unless they get the better of Congress in the bargain, it is hard to see how its action can help them in any way. If yearly payments are made to the Government to enable it to establish the sinking fund, the latter will grow slower than it might in the hands of the company. The Government now borrows money from the public at less than 5 per cent. interest; it certainly would not be justified in paying the railroad companies more than it does other lenders. The companies will do much better to purchase their own first-mortgage bonds for their sinking fund. They can do this, or otherwise invest such sums as they can spare yearly, without asking any help from Congress.

It would, doubtless, be a very good thing for the companies if the Government could be persuaded to buy back the lands it gave them, or the unsalable portions of them, at $2.50 cents an acre, and make the purchase money the nucleus of a sinking fund, which would, probably, be so large at the maturity of the bonds that the Government would have to pay a few millions to the companies, while having on hand and still unsalable nineteen-twentieths of the land. But such a measure will hardly be adopted until we have a Congress of Tweeds and Credit Mobilier "statesmen"; and even they, since the old Pacific railroad scandals, would probably prefer to make their money in some other enterprise.

The two great companies are now worth much more than the present value of the debt to the Government plus the prior liens. Both have been paying, recently, 8 per cent. dividends. The stock of the Union Pacific sells at the New York Stock Exchange at about 64, and this with full knowledge of its debt to the Government. As there is outstanding $35,400 of stock per mile of road, the shares have a market value of about $22,655 per mile, which is $9,000 more than the present worth of the debt. If the present rate of dividend can be maintained permanently, but for the debt, doubtless the shares would sell at par at least, and the discount of 36 per cent. may be counted as an allowance to counter-balance the Government claim. By a reduction of the dividend, which would still leave enough to justify the present price, a sinking fund may be provided which will pay the debt at maturity. It will not be necessary, however, to do this. If the company accumulates half the amount of the debt while paying 4 or 5 per cent. dividends regularly, it will have such credit at the maturity of the Government bonds, that it can easily negotiate a loan to retire the other half.

Doubtless circumstances might arise which would make the value of all the railroads at the maturity of the Government bonds less than this accumulated debt. Should new lines be built and competition set in in any way comparable to that between trunk lines east of the Mississippi, the roads might find it hard to earn more than the interest on the first-mortgage bonds. But no sort of jugglery will enable the roads to give the Government, for a sinking fund or otherwise, anything, unless they earn something; and no form of contract will make the earnings any larger, make a sinking fund increase faster, or cause the property mortgaged to be any more valuable when the debt is due. The companies seem now pretty well able to take care of themselves; their obligations are well defined, or will be when the pending case is decided; and they are free to provide for them in whatever way may be most advantageous to themselves, or even not to provide for them at all; which, under certain circumstances, might be the most profitable policy for their stockholders.

THE LAKE SHORE & MICHIGAN SOUTHERN.

The Lake Shore report for 1875 is an extremely clear and frank document, and the results are so well summarized in the President's report, which we reprint, that shareholders can easily understand the condition of their property and its history during the year. It is not the most encouraging of reports. The net earnings, which in 1874, however, were the largest ever reported, were less by 35 per cent. in 1875, and were indeed uncomfortably near the amount of fixed charges for interest, rentals, etc. The company, however, earned a surplus equivalent to 2.2 per cent. on it capital stock, which is a tolerable margin for a year like 1875, but hardly satisfactory to those who bought the stock at par in 1873, when the company had paid 8 per cent. dividends continuously for three years.

These net earnings, as the valuable table in the President's report shows, were the smallest in the history of the consolidated company. In 1870, with 14 per cent. less road, they were nearly one-third greater. But it is not this decrease in net earnings alone that has cut down the dividends; the increase in the interest, rentals and other fixed charges has had a great deal to do with that. These fixed charges were 52 per cent.—nearly a million dollars—greater in 1875 than in 1870. Putting the figures for the two years side by side the contrast is sharp:

	Net earnings.	Fixed charges.	Surplus.
1870	$5,140,414	$1,828,897	$3,311,517
1875	3,902,698	2,810,294	1,092,404
Increase	.....	$981,397	.....
Decrease	$1,237,716	.....	$2,219,113

The surplus available for dividends, etc., is thus not one-third as much in 1875 as in 1870, and 56 per cent. of the decrease is due to the reduction in net earnings; 44 per cent. to the increase in the yearly fixed charges—mostly due to an increase in the funded debt, incurred chiefly for the improvement of the road and the increase of its equipment, which were intended to enable the company to carry a larger traffic and at a smaller average expense, both of which objects have been attained.

Down to and including 1874 the fixed charges increased yearly without interruption. Even in 1874 they were 13 per cent. more than the previous year. This progress was most threatening to the interests of the stockholders. In the present condition of business—light traffic and extremely low rates—it would, if continued, soon absorb the entire net earnings. The most favorable feature of the report for 1875 is the announcement that not only is this fatal progress arrested, but it has been reversed. There was a reduction of 6¾ per cent. in the fixed charges as compared with 1874.

The addition to the capital of the company begun after the consolidation in 1870 was probably not wisely made. Still, unquestionably, an addition was necessary—was absolutely indispensable. The road was not equal to the traffic offered it, and, what was worse, it could not carry its traffic economically. As we have said, the improvements had their effect. The road is now one of the cheapest carriers among American railroads. Witness the following statement of expenses per ton and per passenger per mile for four years:

	1875.	1874.	1873.	1872.
Ton-mile	0.787	0.767	0.946	0.920
Passenger-mile	1.737	1.892	1.810	1.749

Passenger expenses have not decreased, but the reduction in freight expenses is 20 per cent. in four years, though there has been no appreciable increase in traffic, and such increase as there is has been more than neutralized in its effect on expenses by the considerable increase meanwhile in mileage of road worked. So far as traffic is concerned, indeed, the returns of 1875 are wonderfully like those of 1872. There is 2 per cent. more freight and 1½ per cent. more passenger movement in the later year, supplied, however, by 3½ per cent. more road. The difference in net earnings, which were nearly a third less—$1,950,000 less—in 1875, is thus wholly due to the decrease in the rates received; the decrease in dividends, to this decrease in rates received plus the increase of $600,000 in the fixed charges.

We dwell somewhat on these facts because some might hastily conclude that the improvements of the road have been of no advantage to the company; or that the administration has not succeeded in working the road economically. The truth is, the traffic of the western sections of the trunk lines is of such a nature that, under existing

regulations for dividing rates, the average received by them is disproportionately small. They have less high-class freight to carry, and much of the local as well as the through traffic is competed for. The public does not sufficiently consider this. "Why does the Michigan Central divide nothing, and the Lake Share but 2 per cent.," one may ask, "when the New York Central and the Pennsylvania make 8 per cent. in spite of railroad wars and low rates?" Aside from the heavier traffic of the Eastern lines, it must be remembered that their average rates, low as they are, are considerably higher than the Lake Shore's. Even the Pennsylvania, with its enormous mineral traffic, in 1875 received about 5 per cent. more than the Lake Shore for carrying freight, and the New York Central's receipt was no less than 26 per cent. more. If the Lake Shore had been able to obtain for carrying freight in 1875 as high an average rate as that received by the New York Central, its freight earnings would have been larger by $2,530,000, and of course the net earnings would have been increased by that amount—enough by itself to pay a 5 per cent. dividend on the entire $50,000,000 of stock.

Yet compared with the New York Central the Lake Shore has a light traffic. Per mile of road it has less than half as much passenger traffic and 43 per cent. less freight traffic. Its passenger traffic is nearly the same as the Erie's, but its freight traffic is a quarter less; the Pennsylvania (Main Line and Branches) in 1875 had 9 per cent. more passengers and more than twice as much freight per mile of road. Of these three trunk lines, the Pennsylvania carried freight at a sixth less cost than the Lake Shore, the Erie at one-third more; the New York Central at 3 per cent. more. The Atlantic & Great Western, which for some distance is a near neighbor of the Lake Shore, received nearly the same rate for freight (0.005 cent per ton per mile more), and had working expenses 0.094 cent, or 11 per cent., greater.

The traffic of the Lake Shore road has decreased somewhat since 1873, when it was heaviest. Freight traffic last year was 10 per cent. and passenger traffic 8 per cent. less. But the freight traffic is conducted with a much smaller train mileage. This is due, as has been noticed in other roads which have been greatly improved in condition of track, number of tracks, sidings, etc., by an increase in the average train-load. This has grown nearly 24 per cent. in two years—from 131.3 to 162.6 tons. This, however, is partly the result of greater evenness in the movement of freight in opposite directions—at least the increase from 154 to 162.6 tons from 1874 to 1875 is chiefly due to this. In the former year, 75.4 went east and 24.6 went west; in the latter, 71.9 per cent. east and 28.1 west. By this it appears that the average train eastward, which usually starts fully loaded, carried 232.2 tons in 1874 and 233.8 tons in 1875—almost the same. That the west-bound traffic should have been largely increased (8 per cent.) during a year when merchandise and manufactures were not active indicates that the local resources of the road have been unusually well utilized, and that the managers have appreciated the fact that a load at almost any price is better than an empty car when the car must be moved with or without a load, as is the case with west-bound freight cars. If we go back a little, however, we will find that the average train-load eastward has largely increased.

The report of this company, without being very large (48 pages) is unusually full of information, and is especially noticeable from the clearness with which this information is presented. Not only are the figures there from which, by laborious calculations, the inquirer may find results which will give a clear idea of the business of the company and its progress; but the calculations are, for the most part, ready made to his hand, and the results presented with the data from which they are deduced. Most of calculations which we are accustomed to make in abstracts of reports we find here ready made; with many others which ought to have great value to those who conduct the business of the line. This is a matter too much neglected. Most people have a horror of statistics, though railroad officers can hardly do good work without them. It is, however, by no means advisable to hurl a crude mass of figures at the proprietors and employes of a railroad for them to analyze. Few are capable of such work, and fewer still can do it skillfully or without great waste of time. The company's accountants should do this work once for all, and so present a report in which a shareholder, an assistant superintendent, a station agent or a conductor can find what he wants to know without turning himself into a calculating machine for some hours.

The Grand Trunk.

The Grand Trunk Railway appears by its report for the last half of 1875 to have had lower average freight rates than any of the American trunk lines so far east. The rate reported for the entire year 1875 is just 1 cent per ton per mile, against 1.10 cents in 1874, 1.44 in 1873, and 1.38 in 1872. These receipts were partly in gold and partly in American currency, but probably chiefly in gold, so that this amount, small as it is, is yet greater than the Lake Shore's average of 1.01 cents for the same year, and probably about the Pennsylvania's receipt of 1.058, but less than the Erie's (1.209) and the New York Central's (1.275). The Grand Trunk's working expenses being 80 per cent., the average profit was but 0.20 cent, against 0.26 cent on the Erie, 0.442 on the Pennsylvania and 0.516 on the New York Central. The margin in the case of the Grand Trunk is so narrow on the average freight that it is hard to believe that any profit is reaped on that traffic which it takes at large reductions from the average rates, including nearly all its traffic between New England and the Northwest. However this may be, there can be no doubt whatever that the shorter routes could carry this traffic at much less cost to themselves. The average expense per ton per mile for the five lines below during 1875 or the fiscal year nearest was:

Grand Trunk	0.800 cent.
New York Central & Hudson River	0.759 "
Erie	0.949 "
Pennsylvania	0.616 "
Lake Shore & Michigan Southern	

The figures for the Grand Trunk should be increased probably one-eighth to equalize specie with currency, and it has to carry its through traffic about 25 per cent. further on the average, so that the proportion of expenses to receipts from that traffic must be decidedly greater.

The Grand Trunk's receipts and expenses, during the half year, per mile of road worked (1,388 in all both half years) were, reduced to American currency:

	1875.	1874.	Dec.	P.c.
Receipts	$4,057	$4,387	$330	7.5
Working expenses	3,245	3,526	281	8.0
Net earnings	$812	$861	$49	5.8

This, be it remembered, is for the last half of the year, not for a whole year. The amount of receipts is not small—about what the Illinois Central and the Chicago & Alton get; but the working expenses are, for well known reasons, chief of which is the excessively low average rate received, unusually large, and the net earnings from the best of the two half years would only pay interest at 6 per cent. on a currency capital of $28,700 per mile of road, while the Grand Trunk's capital, unfortunately, is more than five times as great. As the holders of the larger part of the shares representing this capital doubtless long ago ceased to expect any return, the disappointment at the result can hardly be overwhelming; but a considerable capital was subscribed but a few years ago to pay for narrowing the gauge and other improvements, and the failure to earn any interest on this new capital doubtless falls heavily on the investors. The capital has had its effect on this road, enabling it to do its work at much less cost than formerly; but, as in so many other instances, the reductions in rates received have been so much greater than those in expenses that the improved line has not been able to earn as much as the old inferior line returned a few years ago.

Thus, the expenses and profit per ton per mile for the four half-years for which the receipts are given were, approximately:

	Expense.	Profit.
1872	1.110 cents.	0.270 cent.
1873	1.166 "	0.274 "
1874	0.885 "	0.215 "
1875	0.799 "	0.201 "

Of course, not all this reduction, which amounts to 28 per cent. since 1872 and to 31 per cent. since 1873, is due to the improvement of the road. Prices of labor and materials are lower than they were a few years ago, in Canada as well as in the rest of the world. But part of the saving must be due to the great improvements made; and Grand Trunk investors may at least comfort themselves with the reflection that if they had not put new capital into the line, it would be much worse off than it actually is.

Technical Conventions.

The annual convention of the American Railway Master Mechanics' Association will be held this year in Philadelphia, beginning Tuesday, May 16. Arrangements have been made for the accommodation of members at the Hotel Aubrey, which is located in West Philadelphia, near the Pennsylvania Railroad depot.

The Master Car-Builders' Association will hold its annual meeting in New York, Wednesday, June 14.

The annual convention of the American Society of Civil Engineers will be held in Philadelphia, June 13.

Record of New Railroad Construction.

This number of the *Railroad Gazette* has information of the laying of track on new railroads as follows:

Wicomico & Pocomoke.—Extended from Berlin, Md., east to Ocean City, 7 miles.

Worcester.—Extended 3 miles, to Franklin, Md.

Little Rock & Fort Smith.—Extended from Ozark, Ark., westward 7 miles.

St. Louis, Bloomfield & Louisville.—Track laid from Bedford, Ind., west 4 miles. It is of 3-feet gauge.

St. Louis, Keokuk & Northwestern.—Track laid from Louisiana, Mo., northwest 12⅛ miles.

This is a total of 33¼ miles of new railroad, making 432 miles completed in the United States in 1876, against 220 miles reported for the same period in 1875, 375 miles in 1874, and 654 in 1873.

LAKE NAVIGATION opened April 28, when the propeller St. Albans of the Northern Transportation Line passed through the Straits of Mackinac, followed by several other vessels. The opening is but two days earlier than last year, but as early as it has occurred since 1871. The fleet from Chicago had on board 2,295,293 bushels of grain, the Milwaukee fleet 1,615,685 bushels; and the total from Lake Michigan ports was a little more than 4,000,000 bushels—enough to make 11,200 car loads. All of these, probably, took their cargoes before the railroad war broke out, and it seems questionable now, if the rail rates of the past week are maintained, whether they will again get cargoes at rates which will pay current expenses. Thus another important interest is threatened by this failure of the railroad to agree and combine. If the rates were satisfactory to the companies—that is, if they left them a margin of profit, however small—the vessel interest would have no ground for complaint, but would have to accept the situation, as the legitimate result of the progress in the art of railroad transportation; but they have a right to complain when the value of their business is destroyed by a policy which at the same time impoverishes the railroad companies. After years of popular prejudice and State legislation to prevent railroad combinations, we find first one important interest and then another clamoring for a railroad policy which cannot possibly be secured without such a combination.

THE RAILROAD WAR has been very actively carried on during the past week, during which very large amounts of grain have been taken, usually, it appears, at the rate of 20 cents per hundred, or 12 cents a bushel for wheat and 11.2 cents for corn from Chicago to New York. So far, west-bound rates are unaffected, but there are rumors that they will go to pieces soon, and perhaps passenger rates also. The New York Central appears as the irreconcilable party now, claiming that the adjustment of rates and the combination of last winter tended to divert grain from it and New York to the railroads which carry to Philadelphia and Baltimore. It is true that Baltimore had unusually large corn receipts, and it has been charged that they were secured by cutting the regular rates. But it is also true that a large proportion of these receipts came from a district which is considerably nearer to Baltimore than to New York. The trouble with the Grand Trunk has helped to bring on the crisis. There is, however, a feeling among some railroad men that the conflict will not last, and it may indeed be intended to bring about some change in the terms of the old combination, and to extend rather than to destroy it. Evidently this might be done by making it unprofitable for a company to stay out of it.

"THE GRANGER CASES," involving the constitutionality of the Northwestern railroad laws, are expected to be decided during the present term of the United States Supreme Court, and if so the decisions must be announced next Monday or the following one, as after the middle of May the Court adjourns until fall. The Illinois, the Wisconsin and the Iowa laws are involved in different cases which have been tried and which the Court has now under advisement. They were presented with great care on both sides, many of the best lawyers of the country being engaged, and the decisions will be an event of importance in the history of American railroads.

General Railroad News.

ELECTIONS AND APPOINTMENTS.

Boston & Albany.—The Massachusetts Legislature has elected the following State directors for the ensuing year: Ex-Gov. Thomas Talbot, of Billerica; C. L. Wood, of New Bedford; J. H. Chadwick, of Boston. The two last are re-elected.

Oregon & California.—At the annual meeting recently the following directors were chosen: S. F. Chadwick, W. L. Halsey, Ben. Holladay, R. Kochler, C. H. Lewis, H. Theilsen, George W. Weidler.

Missouri, Kansas & Texas.—Mr. Wm. Bond, late Receiver, becomes General Manager, the road being transferred to the Union Trust Company as Trustee.

Detroit, Monroe & Toledo.—At the annual meeting in Detroit, April 25, the following directors were chosen: A. Schell, E. D. Worcester, W. L. Scott, Amasa Stone, H. B. Paine, Charles Paine, Charles Collins, George B. Ely, C. P. Leland, A. Keep, C. Moorhouse. The board elected Amasa Stone, President; C. P. Leland, Secretary and Treasurer. The road is leased to the Lake Shore & Michigan Southern.

Chicago & Northwestern.—Mr. Marvin Hughitt, General Superintendent, is appointed General Manager in place of Mr. H. H. Porter, who retires on account of press of private business.

Illinois Midland.—At the annual meeting in Decatur, Ill., April 26, the following directors were chosen: R. G. Hervey, J. C. Lake, H. Vanseliar, L. Genis, R. J. Reese. The board elected officers as follows: President, L. Genis, Terre Haute, Ind.; Vice-President, J. C. Lake, Decatur, Ill.; Secretary and Treasurer, R. J. Reese, Paris, Ill. Mr. Genis succeeds R. G. Hervey, who declined a re-election.

Harlem River & Portchester.—At the annual meeting in New York, April 25, the following directors were chosen: Wilson G. Hunt, A. B. Van Ness, George V. Miller, G. B. Carhart, E. M. Reed, E. H. Trowbridge, E. J. Sandford, C. M. Pond, W. D. Bishop, N. Wheeler, J. T. Shelton, W. E. Barnett, John Hunter. The road is leased to the New York, New Haven & Hartford.

Logansport, Crawfordsville & Southwestern.—Mr. James Harrison has been appointed General Roadmaster.

Southern Railway & Steamship Association.—Mr. Charles A. Sindall has been appointed General Commissioner *pro tem.* in place of Gen. Albert Fink, resigned. The appointment is to last until the general meeting of the Association.

Northern Pacific.—Mr. Henry Brown has been appointed Master of Transportation for the Dakota Division, and will act also as agent at Moorhead and Fargo.

Erie.—B. W. Spencer is reappointed Assistant Cashier of Receiver in general charge of the office details as heretofore.

St. Louis, Iron Mountain & Southern.—Mr. J. J. Frey has been appointed Superintendent of the Missouri Division. He was until recently Superintendent of the Missouri and Sedalia divisions, Missouri, Kansas & Texas.

San Francisco, San Mateo & Santa Cruz.—At the annual meeting in San Francisco, April 19, the following directors were chosen: James W. Bicknell, James Byrnes, John Garretson, J. C. Steele, J. P. Ames, W. E. Sell, John Spaulding. The board re-elected the old officers, as follows: James W. Bicknell, President; J. C. Steele, Vice-President; W. E. Sell, Treasurer; Charles T. Bridge, Secretary; L. H. Shortt, Engineer.

Southern Pennsylvania.—At the annual meeting in Philadelphia, May 1, Thomas B. Kennedy was chosen President, with the following directors: George B. Roberts, Thomas A. Scott, Wistar Morris, Strickland Kneass, Josiah Bacon, W. J. Howard. John L. Ritchey was elected Secretary and Treasurer. The road is leased to the Cumberland Valley Company.

Shamokin Valley & Pottsville.—At the annual meeting in Philadelphia, May 1, Thomas A. Scott was elected President, and Jacob P. Jones, J. D. Cameron, J. N. Dubarry, A. J. Cassatt and W. MacVeagh, managers. The road is leased to the Northern Central.

Chartiers.—At the annual meeting in Philadelphia, May 1, George B. Roberts was chosen President, with the following directors: Wistar Morris, William J. Howard, Josiah Bacon, Alex. Biddle, S. Kneass, Samuel M. Felton. The road is leased to the Pittsburgh, Cincinnati & St. Louis.

Elmira & Williamsport.—At the annual meeting in Philadelphia, May 1, Thomas Kimber was chosen President, with

the following directors: Thomas Kimber, Jr., William C. Longstreet, William D. Lewis, Alex. S. Diven, William R. Fisher, Thomas Neilson. The board elected William C. Longstreet, Secretary; Louis P. Geiger, Treasurer. The road is leased to the Northern Central.

Pittsburgh, Titusville & Buffalo.—At the annual meeting in Philadelphia, May 1, the following officers were elected for the ensuing year: President, Thomas H. Dudley; directors, John Scott, William M. Carter, Joseph H. Herr, John W. Moffly, John S. Ritter, James H. Campbell.

Sunbury & Lewistown.—The purchasers of this road met in Philadelphia, May 1, and organized a new company by electing N. Fries President, with the following directors: J. W. Moffly, Josiah Hart, James H. Campbell. Geo. Schnure, George Shannon, R. W. Shenk. The board elected George Bull Secretary and Josiah Hart Treasurer.

Rock Island & Mercer County.—The first board of directors of this new Company is as follows: P. L. Cable, R. R. Cable, Cornelius Lynde, Rock Island, Ill.; G. W. Cable, Hiram R. Cable, Davenport, Ia.

St. Paul, Stillwater & River Falls.—This company was recently organized at Hudson, Wis., by the election of the following officers: A. B. Stickney, President; Duncan McGregor, Vice-President; D. C. Fulton, Secretary; A. E. Jefferson, Treasurer.

West Wisconsin.—Mr. E. W. Winters has been appointed General Superintendent, in place of Mr. Wm. G. Swan, who has resigned. Mr. Winters has been connected with the Chicago & Northwestern for a number of years.

Kansas City, Burlington & Santa Fe.—At the annual meeting in Burlington, Kan., recently, the following directors were chosen: W. H. Schofield, Orson Kent, J. M. Rankin, James F. Dane, S. P. Richards, A. B. Schofield, Lot Wainwright, A. H. Sellers, C. H. Bunker, J. P. Harris, Edwin Tucker. The board elected W. H. Schofield, President; S. P. Richards, Vice-President; J. M. Rankin, Secretary; James F. Dane, Treasurer.

Pittsburgh, Cincinnati & St. Louis.—Mr. George H. Kimball has been appointed Superintendent of Bridges.

PERSONAL.

—Mr. I. Hone, Locomotive Superintendent of the Vermont Division, Portland & Ogdensburg road, was severely injured a few days since at St. Johnsbury, by falling between the engine and platform, in the act of getting off the engine.

—In pursuance of his resolution previously expressed, Mr. Albert Fink has resigned his position as General Commissioner of the Southern Railway and Steamship Association, and will shortly visit Europe for the purpose of continuing his studies of the science of transportation. Mr. Fink's resignation leaves a vacancy which the Association will find it difficult to fill.

—Messrs. Brooks & Kelly, of Lennoxville, P. Q., extensive railroad contractors, have made an assignment for the benefit of their creditors. They have had heavy contracts on the Intercolonial, the St. Francis & Megantic and the Northern Colonization roads. It is understood that the embarrassments of the last-named company are the cause of their failure.

—Dr. R. G. Hervey, who retired from the presidency of the Illinois Midland Company last week, was one of the original projectors of the Paris & Decatur road and has been prominently connected with that and the present company ever since. He remains a director of the company.

—Mr. H. H. Porter retired from the position of General Manager of the Chicago & Northwestern Railway May 1, on account of the pressure of his private business.

—Mr. D. W. Kilbourne, one of the first settlers of Keokuk, Ia., died in New York, April 24, at the age of 73 years. He was one of the original projectors and builders of the Des Moines Valley road, and was President of the company for several years.

—Mr. Frank L. Burroughs has resigned his position as Master of Transportation of the Toledo, Wabash & Western road to accept a similar position on the New York Central & Hudson River.

—Mr. Wm. G. Swan, for some years past General Superintendent of the West Wisconsin road, has resigned his position. His resignation was tendered last fall, but at the urgent request of the company he consented to remain until now.

TRAFFIC AND EARNINGS.

Railroad Earnings.

Earnings for various periods are reported as follows:

Year ending Dec. 31:

	1875.	1874.	Inc. or Dec.	P. c.
Lake Shore & Michigan Southern	$14,434,199	$17,146,131	Dec.. $2,711,932	15.8
Expenses	10,531,501	11,152,372	Dec.. 620,871	5.6
Net earnings	$3,902,698	$5,993,759	Dec.. $2,091,061	34.9
Earnings per mile..	12,284	14,592	Dec.. 2,308	15.8
Per cent. of expen's	72.96	65.04	Inc.. 7.92	12.2

Three months ending March 31:

	1876.	1875.		
Houston & Tex. Central	$779,285	$640,102	Inc.. $139,183	21.7
Louisville, Cin. & Lexington	242,869	.....	.....	....
Mobile & Ohio	537,055	463,154	Inc.. 73,901	15.3
Paducah & Memphis	59,765	47,121	Inc.. 12,644	26.8

Two Months ending February 29:

Atlantic & Gt. Western	$582,104	$590,506	Dec.. $8,402	1.4

Month of January:

Rockford, Rock Island & St. Louis	$64,225	.....	.....	....

Month of March:

Houston & Tex. Central	$214,637	$205,211	Inc.. $9,426	4.6
Louisville, Cin. & Lexington	80,757	110,806	Dec.. 30,049	27.1
Expenses	65,539	101,014	Dec.. 35,475	35.3
Net earnings	$15,218	$9,792	Inc.. $5,426	55.4
Per cent. of exps...	81.16	91.16	Dec.. 10.00	11.0
Mobile & Ohio	149,829	130,251	Inc.. 19,578	15.0
Paducah & Memphis	16,922	16,938	Dec.. 16	....

Month of April:

Chic., Milwaukee & St. Paul	$650,944	$639,669	Inc.. $11,275	1.8
St. Louis, Kan. City & Northern	235,349	222,582	Inc.. 12,767	5.7

Third Week in April:

Denver & Rio Grande	$8,312	$8,005	Inc.. $307	3.8
Michigan Central	140,406	126,029	Inc.. 14,377	11.4
Missouri, Kan. & Tex.	50,536	46,583	Inc.. 3,953	8.5
Ohio & Mississippi	93,925	74,354	Inc.. 19,571	26.3
St. Louis, Kan. City & No.	60,480	59,172	Inc.. 1,317	2.2

A Paying Rate.

A paper in Virginia, Nevada, complains because the Virginia and Truckee Railroad charges $54 a car-load for hauling coal from Reno (the junction with the Central Pacific) to Virginia, 52 miles, which is a trifle less than 10 cents per ton per mile. The car-load of coal before it reaches Reno is hauled 78 miles by the Union Pacific for $18 (2.31 cents per ton per mile), and 589 miles by the Central Pacific for $80 (1.36 cents per ton per mile). The rate on the Virginia road is certainly a high one, but the road must get nearly its whole support from Virginia business and is a very hard one to work, therein differing essentially from the Pacific roads, which give very low rates for coal because they cannot get it to carry if they charge more.

Railroad Traffic.

Through freight shipments eastward over the Central Pacific in March were as follows:

	1876.	1875.	Decrease.	P. c.
From San Francisco, tons	1,835	3,072	1,237	40.3
From interior points, tons	180	280	97	34.6
Total	2,015	3,352	1,334	39.8

The leading items were 619 tons tea and 309 tons wool. The shipments for the three months ending March 31 for four years past were as follows:

	1876.	1875.	1874.	1873.
Tons	7,132	8,609	17,597	4,252

The great traffic of 1874 was owing to the extraordinary demand that year for California barley, owing to the failure of the Eastern crops.

The number of cars received and forwarded by the various lines entering Indianapolis during April was as follows:

	1876.	1875.	Decrease.	P. c
Loaded cars	30,972	35,871	4,899	13.6
Empty cars	15,995	19,893	3,898	19.6
Total	46,967	55,764	8,797	15.7

The heaviest movement was in the fourth week, when 13,729 cars were moved.

Rapid Transit Engines.

The New York Central & Hudson River Railroad Company has just received the first engine for running what are called "rapid transit trains" from New York to Williams Bridge on the Harlem Division. It is a tank engine, built on the general plan patented by Mr. M. N. Forney. It has 15×20 in. cylinders, driving wheels 49 inches in diameter, and carries 1,200 gallons of water and weighs with tanks filled 74,000 pounds. Two more engines of the same kind have been ordered and are nearly completed.

Flour and Grain Movement.

The receipts of grain and flour at Baltimore during April were as follows:

	1876.	1875.	Inc. or Dec.	P. c.
Flour, barrels	113,298	176,221	Dec. 62,928	35.7
Wheat, bushels	230,387	401,123	Dec. 170,736	42.6
Corn, bushels	1,379,347	1,264,895	Inc. 114,452	9.0
Oats, bushels	41,475	65,932	Dec. 24,457	37.1
Rye, bushels	7,390	5,400	Inc. 1,921	35.6
Total, bushels	2,168,358	2,530,354	Dec. 361,996	14.3

For the four months ending April 30 the receipts are reported as follows:

	1876.	1875.	Inc. or Dec.	P. c.
Flour, barrels	448,069	559,960	Dec. 111,871	20.0
Grain, bushels	9,943,451	5,071,194	Inc. 4,872,257	96.1
Total, bushels	11,959,852	7,591,014	Inc. 4,368,838	57.6

The increase this year was chiefly in corn.

Coal Movement.

Coal tonnages for the week ending April 22 are reported as follows:

	1876.	1875.	Inc. or Dec.	P. c.
Anthracite	440,735	259,274	Inc..181,461	70.0
Semi-bituminous, Broad Top and Clearfield	33,261	17,843	Inc.. 15,418	86.6
Cumberland	30,204	52,438	Dec.. 22,234	42.4
Bituminous, Barclay	6,754	.....	.....	....
Bituminous, Western Pa.	31,977	.....	.....	....
Coke, Western Pennsylvania	19,042	.....	.....	....

A contract is reported for 50,000 tons of Clearfield coal, for steamship purposes, at $4.94 per ton, delivered in New York. This is said to be much below the lowest bid made by any of the Cumberland companies.

The Philadelphia *Times* of April 28 says: "The coal operators of the Lehigh Valley yesterday decided to entirely suspend the production of coal in that section for two weeks from next Wednesday, the quota assigned to the region for the month having been more than filled. The Schuylkill Coal Exchange met yesterday afternoon and decided to restrict production for a time."

It is said that the Delaware & Hudson Canal Company will this year largely increase its coal shipments northward over its system of leased roads. Most of these north-bound shipments go to points where there is no competition from the other coal companies.

The coal tonnage of the Belvidere Division, Pennsylvania Railroad, for the four months ending April 29 was as follows:

	1876.	1875.	Inc. or Dec.	P. c.
To Coal Port for shipment	47,435	206	Inc.. 47,229	....
To South Amboy for shipment	154,719	17,693	Inc..137,026	774.2
Distributed to local points on New Jersey lines	45,408	57,778	Dec.. 12,375	21.4
Company's use on New Jersey lines	16,995	5,751	Inc.. 11,244	195.5
Total	264,552	81,428	Inc..183,124	224.9

Of the total tonnage this year 138,593 tons were from the Lehigh, and 125,959 tons from the Wyoming region. Nearly all the decrease in local tonnage was in the deliveries to the Phillipsburg and the Andover Iron Works.

Lake Freights.

Lumber rates per thousand feet to Chicag were quoted as follows, April 25:

From Tawas	$1 75
From Grand Harem	1 37½
From Muskegan	1 37½
From Mainstee	1 50

The regular rate on coal from Cleveland to Chicago seems to have settled down for the present at 50 cents a ton.

It is reported that the propeller lines have agreed upon uniform rates on western-bound freights from Buffalo to Chicago, Milwaukee and Green Bay during the Spring and Summer, as follows: First-class, 25 cents per 100 lbs.; second-class, 15 cents; third-class, 12 cents; fourth class, 9 cents. To Toledo and Detroit, 15, 12, 10, and 8 cents for the respective classes.

East-bound Rates.

The ordinary rates on grain from Chicago to New York seems to have been 25 cents until after the 24th. The Chicago *Inter-Ocean* of the 26th says:

"The daily tumble in grain and fourth-class rates to the East took place with due regularity on yesterday. Nominally, 25 cents, the figure of the day before, obtained; but the rival road that was not offering 'special rates'—'being it's you, you know'—could not be found, and quotations were made in many well-authenticated cases at 22½ cents per hundred pounds, and even at 22 cents. The shipments on which these terms were made were principally for Board of Trade men, and were simply average ones in size."

Friday it is reported that one road contracted to carry 130,000 bushels of wheat from Chicago to Glasgow and Antwerp. Rates were quoted at 25 cents per hundred to New York, but it was said that the rates actually accepted were 20 to 22½ cents. The railroads were taking great quantities of grain, the rates being so low that it was no object to hold back to ship by lake and canal.

Nearly a thousand cars are said to have been taking loads for Philadelphia over the Pennsylvania line on that day; and on Thursday the Michigan Central brought 630 cars of grain into Detroit. A contract to deliver 120,000 bushels in Liverpool, at 42 cents gold per bushel, is quoted; and as 15 cents at the utmost would cover the rail rate to New York, there would seem to be a large margin on this rate for the New York terminal and the ocean rate.

This week the rates reported have been 20 per cent. for large shipments and 22½ for single car-loads.

ANNUAL REPORTS.

Lake Shore & Michigan Southern.

The President and Directors of the Lake Shore & Michigan Southern Railway Company submit to the stockholders the following report for the fiscal year ending Dec. 31, 1875:

ROAD OPERATED.

The number of miles of road operated in 1875 was the same as in 1874—1,175.39 miles—of which 540.37 are main line, and 635.02 miles are branches and tributary roads. This company owns 1,024.71 miles of railroad (although 160.11 miles are embraced in three other organizations), and leases 150.68 miles.

Of the 540.37 miles of main line, 230.80 miles are double track, making the main line, reduced to single track, equal to 770.45 miles; and two branches—203.66 miles—are so situated that they, with the main line, form a double line of road between Cleveland, O., and Elkhart, Ind., (101 miles east of Chicago), making, together, 974.11 miles of railroad, of which 604 miles are laid with steel rail. Contracts have been made for substituting 14,000 tons (150 miles) of steel rails for iron during the coming year.

The side tracks were increased in 1875 by 17.48 miles, and now amount to 446.70 miles.

The total number of miles of track to be maintained amounts to 1,852.89.

CONSTRUCTION.

This account for 1875 amounted to $275,481.25, as follows:

New side tracks, 17.48 miles	$121,797 73
Ashtabula harbor—coal docks, etc.	31,180 03
Real estate	24,293 04
New buildings	90,915 13
Bridge masonry	7,295 67
Total—1875	$275,481 85
1874	1,043,723 82
1873	2,349,999 84
1872	5,804,217 99
1871	3,343,383 70
1870	1,113,560 90
Total—six years	$13,630,328 10

EQUIPMENT.

But little change was made in the equipment of the road in 1875. Two engines were sold, reducing the number from 497 to 495. Ninety-five cars of various classes were added, increasing the number from 10,442 to 10,537. The amount of this account for 1875 was $95,238.02; for six years, 1870 to 1875, inclusive, $5,904,087.09, for 223 locomotives and 4,739 cars.

The road is equipped sufficiently for a much larger volume of business than it is now doing.

The balance against this company for car service was reduced, as predicted in the last report, from $614,315.86 in 1874, to $428,807.03 in 1875, and a further reduction will be made in 1876.

CAPITAL STOCK.

The capital stock of the company is $50,000,000, to wit:

Guaranteed (10 per cent.)	5,335 shares—$100	$533,500
Ordinary	494.665 shares— 100	49,466,500
	500,000 shares—$100	$50,000,000

Of the guaranteed stock, the claim for dividends between 1857 and 1863 has been settled by compromise on $350,600, leaving $182,900 still unsettled. Dividends of 5 per cent. Feb. 1, and 5 per cent. Aug. 1, have been regularly paid on this stock since Aug. 1, 1863, the date of the first dividend.

Of the ordinary stock the company owns 2,514 shares ($251,400), which appear among its assets in the balance sheet.

BONDED DEBT.

The bonded debt of the company stood:

Dec. 31, 1874	$36,511,000
Dec. 31, 1875	36,250,000
Decrease	$261,000

This decrease was accomplished by providing for the arrearages of the sinking fund of the first general consolidated mortgage of $25,000,000. This mortgage provides for a sinking fund of one per cent., or $250,000 per year. This obligation has run for five years, amounting to $1,250,000, and is now entirely fulfilled. This leaves outstanding $23,750,000 of the first general mortgage debt—including the divisional—or bonds of the different companies embraced in the consolidation, which, at maturity, are to be merged into this debt.

Of the second general mortgage of $25,000,000 there are outstanding, including the bonds of 1882, $12,500,000. The entire debt of the company bears interest at the rate of 7 per cent. (currency).

EARNINGS.

	1875.	1874.	Decrease.
From freight (5,012,490 tons)	$9,639,038 14	$11,918,349 78	$2,279,311 64
From passengers (3,170,234 passengers	3,922,797 88	4,249,022 37	326,224 49
From all other sources	872,362 74	978,758 61	106,395 87
Total	$14,434,198 76	$17,146,130 76	$2,711,932 00
Operating exp's and taxes—1875..72.96 per cent.—1874..65.04 per cent	10,531,500 88	11,152,371 56	620,870 68
Net earnings	$3,902,697 88	$5,993,759 20	$2,091,061 32
Interest on funded debt, leases branch roads, dividend (10 per ct.) on guaranteed stock	2,810,293 64	3,006,192 76	.....
Balance for stock ($2.20 per share)	$1,092,404 24	.....	.....
Paid dividend No. 11, 2 per cent., Feb. 1, 1876	989,330 00	.....	.....
Surplus, 1875	$103,074 24	.....	.....

The results for the six years of this (consolidated) company's existence are as follows:

Year.	Gross Earnings.	Operating Expenses and Taxes.	
		Amount.	Per ct.
1870	$13,509,235 53	$8,368,821 08	61.95
1871	14,898,449 38	9,779,806 23	65.64
1872	17,699,935 28	11,839,525 62	66.90
1873	19,414,509 26	13,746,598 54	70.80
1874	17,146,130 76	11,152,371 56	65.04
1875	14,434,198 76	10,531,500 88	72.96

Year.	Net Earnings.	Interest, Leases and Dividend on Guaranteed Stock.	Dividends. Amount.	Rate.	Surplus.
1870.....	$5,140,414 45	$1,828,897 09	$2,752,360	8	$559,157 36
1871.....	5,118,643 15	2,121,164 70	2,874,355	8	123,122 82
1872.....	5,860,409 66	2,201,459 13	3,466,096	8	192,854 56
1873.....	5,667,910 72	2,654,560 57	1,978,040	4	1,035,310 15
1874.....	5,908,759 20	3,008,192 76	1,607,661	3¼	1,377,905 19
1875.....	3,902,697 88	2,810,293 64	989,330	2	103,074 24

An analysis of the decrease in freight earnings, 1875, shows as follows:

Decrease from reduced rates.....	$1,603,501 47	or 13.45 per cent.
Decrease from reduced business.....	675,810 17	or 5.67 per cent.
Total decrease.....	$2,279,311 64	or 19.12 per cent.

The average rates in cents per ton per mile for the past six years have been as follows:

	East-bound.	West-bound.	Both ways.
1870.....	1.356	1.882	1.504
1871.....	1.357	1.478	1.391
1872.....	1.272	1.538	1.374
1873.....	1.297	1.437	1.335
1874.....	1.098	1.432	1.180
1875.....	0.954	1.155	1.010

The bitter conflict with each other, inaugurated by other lines in 1874, extended through three-quarters of the year 1875. Into the sharp competition resulting from this conflict this company was unavoidably drawn; and to this mainly, aided, however, by the general depression of business, especially the great prostration of the iron and coal business—causes beyond the control of its management—may be attributed the fact that this company earned but $2.20 per share of stock, against $6.25 per share in 1874.

The average rate per ton per mile in 1875 was, on its entire business, through and local, but one and one-hundredth cents, which is 14¼ per cent. below the very low rate of 1874 (1.18). This difference—0.17 of one cent—on the large tonnage moved, resulted in a loss of net earnings of $1,603,501, which is equal to 3¼ per cent. upon the capital stock.

No more effective illustration of the excessive depression of the rates of transportation could be given than the following comparison:

Average rate per ton per mile, all freight, 1860.....	Cents, 2.292 (gold.)
Average rate per ton per mile, all freight, 1875.....	Cents, 1.010 (currency.)
Reduction.....	Cents, 1.282 (56 per cent.)

On the other hand, taxes in 1875 have averaged 400 per cent. more than in 1860—in some localities as much as 1,000 per cent.—while the cost of supplies and labor used in operating railroads was no less.

An average rate of 1¼ cents per ton per mile—but little more than half (54 per cent.) the rate of 1860—in connection with the rigid economy enforced in every department of the road, would give the stockholders of this company dividends at the rate of 7 per cent. per annum.

The earnings from passengers, as compared with the two preceding years, show the following results:

1875—Moved 3,170,234 passengers an average distance of 52 miles, at an average rate of 2.38 cents per mile, earning.....	$3,922,797 88
1874—Moved 3,096,263 passengers an average of 56 miles, at an average rate of 2.45 cents per mile, earning.....	4,249,022 37
1873—Moved 2,845,163 passengers an average of 63 miles, at an average rate of 2.55 cents per mile, earning.....	4,569,729 74

Decrease in 1875, as compared with 1874, is caused by—

Slightly diminished average rate (7-10 of one mill).....	$115,465 60
Less miles traveled—4 miles per passenger.....	210,758 85
Total decrease.....	$326,224 49

It is a gratifying fact that the *local* business of the road was larger in 1875 than ever before—showing an increase of 67,109 tons freight and 79,328 passengers, in both cases 2.6 per cent. over the previous year.

The reduction in earnings from "all other sources," $106,-395.87, is more apparent than real, the most of it caused by the receipt, in 1874, of back pay for increased mail service, unduly swelling the mail earnings of that year.

OPERATING EXPENSES.

Operating expenses and taxes, 1875, including 105 miles steel rail.....	$10,531,500 88	
Operating expenses and taxes, 1874, including 78 miles steel rail.....	11,152,371 56	
Operating expenses and taxes, 1873, including 141 miles steel rail.....	13,746,598 54	
Reduction, 1875, as compared with 1874.....	$620,870 68	—5.57 per cent.
Reduction, 1875, as compared with 1873.....	3,215,097 66	—23.4 per cent.

It is expected that 1876 will show a further large reduction in this account, the first quarter of the year being over $600,000 less than the same quarter of 1875.

The expenses for 1875 include the entire cost of 9,962 tons (105 miles) of steel rails; 522,753 cross-ties—185 miles—were renewed; 157 cars of various classes were built and purchased to replace a like number worn out or destroyed.

The road and equipment have been maintained in all respects, and emerge from the mild winter in excellent condition.

GENERAL REMARKS.

Upon reference to the "Income Account" on a subsequent page, it will be found that the two items, "Discount on Bonds" and "Interest on Floating Debt," which have appeared in that account, in each preceding annual report of this company, and have absorbed so much money, are not there; they have disappeared never to return, it is hoped.

The sale of bonds and increase of debt came to a full stop in 1874. No increase in the aggregate funded debt has been made since the troublesome floating debt, inherited from the previous administration was extinguished; not only so, but a movement has been made in the opposite direction, by providing for the sinking fund, thus reducing the funded debt.

A noticeable fact shown by this report is, that after paying every charge against the year 1875, including (by anticipation) the dividend payable Feb. 1, 1876, and satisfying the sinking fund, there remained in the treasury a very considerable balance, applicable to the future. This is the first time that this result has been attained.

The fixed charges against net earnings, which take precedence of dividends upon the capital stock, will be, in 1876, as follows:

Interest on L. S. & M. S. R'y debt, $36,250,000 at 7 per cent.		$2,537,500
Interest on D., M. & T. " 924,000 at 7 "		64,680
Interest on K. & W. F. " 600,000 at 7 & 8 "		44,000
Dividend on guaranteed stock, $533,500, at 10 per cent.....		53,350
Rental four branch roads—partly estimated.....		275,000
		$2,974,530
Less interest and dividends on assets.....		225,000
Total.....		$2,749,530

Equal to $229,000 per month.

Mr. Amasa Stone, your Managing Director, resigned July 1, 1875, on account of ill health and private business. Mr. John Newell, formerly President of the Cleveland & Toledo Railroad Company (now a part of this road), and later President of the Illinois Central Railroad Company, was, upon Mr. Stone's resignation, appointed General Manager of the line. Great credit is due these gentlemen and their subordinates for efficiency and economy in operating the road and managing its affairs.

C. VANDERBILT, President.

CLEVELAND, May 3, 1876.

The work done was:

	1875.	1874.
Train mileage—		
Freight.....	5,798,617	6,490,510
Passenger.....	2,743,617	2,520,574
Total.....	8,542,234	9,011,084
Train mileage per mile of road—		
Freight.....	4,935	5,524
Passenger.....	2,334	2,145
Tonnage mileage.....	943,236,161	999,342,081
do per mile of road.....	802,754	850,514
Passenger mileage.....	164,950,861	173,224,572
do per mile of road.....	140,384	147,081
Average train load—		
Passengers.....	60.1	68.7
Tons of freight.....	162.6	154.0

The Auditor, Mr. C. P. Leland, reports earnings and expenses in detail in the following convenient form:

1874.	Per ct.	Earnings.	Per ct.	1875.
$11,918,349 78	69.5	From freight.....	66.8	$9,639,038 14
4,249,022 37	24.8	" passengers.....	27.2	3,922,797 88
312,988 84	1.8	" express.....	2.0	290,404 18
534,899 77	3.1	" mails.....	3.2	454,090 87
44,393 84	.3	" rents.....	.3	49,780 89
86,476 16	.5	" all other sources.	.5	78,086 80
$17,146,130 76	100.	Total.....	100.	$14,434,198 76
		Decrease... $2,711,932 00		

1874.	Per ct. of earn'gs	Expenses.	Per ct. of earn'gs	1875.
$218,460 79	1.21	General office expenses..	1.44	$208,399 90
632,941 22	3.69	Conductors and trainmen.....	4.11	593,316 19
747,978 37	4.37	Engineers and firemen.	4.87	702,748 81
1,848,423 62	10.79	Agents and station labor.	12.11	1,748,592 45
25,354 80	.15	Telegraph repairs and supplies.....	.13	18,750 03
37,671 65	.22	Gas-light account.....	.24	33,958 31
705,984 82	4.12	Repairs — engines and tenders.....	4.53	653,387 09
958,625 88	5.59	Repairs—cars.....	6.02	868,729 95
1,535,547 02	8.96	" roadway and track	9.10	1,314,144 38
752,049 16	4.39	Steel and iron rails	7.63	1,101,013 90
57,385 64	.34	Repairs—bridges.	.47	68,514 76
71,651 52	.42	" fences	.38	54,279 44
280,879 54	1.64	" buildings	2.00	288,193 65
1,226,592 97	7.16	Fuel consumed	7.98	1,151,722 30
154,930 23	.90	Oil and tallow.....	1.17	168,938 61
37,046 57	.22	Waste and rags	.17	24,957 16
219,125 44	1.28	Office, train and station supplies.....	1.25	180,322 58
45,468 20	.27	Damage and loss—freight and baggage.....	.17	24,427 62
13,075 62	.08	Damage to property and cattle killed.....	.05	7,080 50
47,863 19	.28	Personal injuries.....	.31	44,903 53
49,762 39	.29	Law expenses	.21	30,324 35
31,456 62	.18	New York office.....	.05	7,467 21
73,593 91	.43	Rents payable.....	.49	70,146 26
253,319 74	1.48	Outside agencies and advertising.....	1.68	243,163 99
13,209 95	.08	Contingencies.....	.08	12,107 19
614,315 86	3.59	Hire of cars.....	2.97	428,807 03
$10,652,714 72	62.13	.....Total.....	69.61	$10,047,799 59
499,656 84	2.91	.....Taxes.....	3.35	483,701 29
$11,152,371 56	65.04	Total operating expenses and taxes.....	72.96	$10,531,500 88
5,993,759 20	34.96	Decrease.....$620,870 68 .....Net earnings.....	27.04	3,902,697 88
		Decrease net earnings. .. $2,091,061 32		
	100.		100.	

The receipts, expenses and profit per unit of traffic for four years have been, in cents:

Ton-mile.	1875.	1874.	1873.	1872.
Receipt.....	1.010	1.180	1.335	1.374
Expense.....	0.737	0.767	0.946	0.920
Profit.....	0.273	0.413	0.389	0.454
Passenger-mile.				
Receipt.....	2.38	2.45	2.55	2.60
Expense.....	1.73¾	1.59¼	1.81	1.74
Profit.....	0.54¾	0.85¾	0.74	0.86

The stock and debt per mile owned are:

Capital stock.....	$48,260
Funded debt.....	35,366
Total.....	$83,626

Per mile worked the fixed charges, earnings and expenses are:

Interest charge.....	$2,250
Rentals.....	234
Guaranteed dividend.....	45
Total fixed charges.....	$2,529
Gross earnings.....	12,284
Working expenses.....	8,963
Net earnings.....	3,321
Surplus over fixed charges.....	$792

There are some assets in the shape of bonds, etc., that yield an income, and these increase the surplus about $150 per mile.

THE SCRAP HEAP.

Railroad Manufactures.

The Dickson Manufacturing Company, of Scranton, Pa., send to the Centennial a heavy passenger engine, 36 tons weight, of standard gauge, with 17 by 24-inch cylinders and driving-wheels 5½ feet diameter; an eight-wheeled (American) engine of 3-feet gauge, weighing 18 tons, with 11 by 16-inch cylinders and driving-wheels 3½ feet diameter; and, lastly, a shifting tank engine for mine or furnace use, with four wheels, all drivers, 29 inches diameter, 9 by 12-inch cylinders. It is of 3-feet gauge and weighs nine tons.

The Arlington (Vt.) Car Works are building three narrow-gauge passenger cars to go to Chicago. One of them will be exhibited at the Centennial before going to its destination.

The rail mill of the Wyandotte (Mich.) Rolling Mill has started up with a good order.

The Springfield (Ill.) Rolling Mill is full of work and employs about 560 men. When the steel mill is completed about 300 more will be employed.

The New Albany (Ind.) Rolling Mill is running full time and employs about 100 men. Orders are on hand for the Louisville & Nashville and several other roads.

The Union Foundry & Machine Company, of Catasauqua, Pa., is casting the heavy cast-iron bed-plates used for the foundation for the bearing posts of the Gilbert Elevated Railroad in New York.

Porter, Bell & Co., at Pittsburgh, had their locomotive in place in Machinery Hall at the Centennial some time ago, it being the first piece of completed machinery there. The firm is building a shifting engine for the Cambria Iron Company, at Johnstown, Pa.

The Albany & Rensselaer Steel & Iron Company sends an ingot of Bessemer steel weighing eight tons to the Centennial.

The Terre Haute Car Works, at Terre Haute, Ind., are to build 200 box cars for the Missouri, Kansas & Texas road.

The Indianapolis Rolling Mill is at work rerolling iron rails for the Indianapolis and St. Louis road.

At a recent meeting of the stockholders of the East St. Louis Rail Mill Company, Mr. James Beynon, late Superintendent of the Vulcan Iron Works, South St. Louis, was elected a director Secretary and Assistant General Manager.

OLD AND NEW ROADS.

Pennsylvania.

It is said that the old route between New York and Philadelphia, by way of Camden and South Amboy, will be reopened this Summer, and the steam ferry between South Amboy and New York re-established.

New Orleans, St. Louis & Chicago.

The Receiver is cutting down the train service, and will hereafter run only a single daily passenger train between New Orleans and Cairo, which will, he believes, be sufficient to accommodate the traffic.

St. Louis, Bloomfield & Louisville.

A correspondent writes as follows:

"Work on the St. Louis, Bloomfield & Louisville Railroad between Switz City, Ind., and Sullivan, has entirely stopped, owing to financial difficulties. The road will be finished between Bloomfield and Bedford by July 1, 1876.

"The bridge across White River is about finished, and track-laying will commence in a few days on the west end. Track-laying has begun at Bedford and four miles are down."

New York Elevated.

The act known as the Husted bill, which was intended to consolidate and ratify the various acts relating to this company, failed to pass the New York Legislature, which has now adjourned. The officers of the company say that the passage of the act was not really necessary to it, but that it might prevent some litigation.

Wicomico & Pocomoke.

An extension of this road from the former terminus at Berlin, Md., eastward to Ocean City, seven miles, is completed and in operation, making the road 30 miles long, from Salisbury to Ocean City. The latter place is on the Atlantic shore, and is a summer resort which has lately come into notice and is rapidly growing.

New York & Oswego Midland.

The Utica, Ithaca & Elmira Company's temporary lease of the Western Extension from Cortland to De Ruyter expired April 30, and no steps were taken to renew it. The Receivers of the Midland will, however, furnish train service over the road, at any rate until after the foreclosure sale.

Titusville & Erie.

At a large meeting held in Titusville, Pa., April 22, resolutions were adopted in favor of an independent line of railroad from Titusville to Erie, and a committee was appointed to confer with other parties interested in the matter. It was claimed that the road is necessary to prevent the Oil Creek refineries from destruction by the unjust discriminations now made in favor of the outside refiners and especially those of Cleveland.

Rome, Watertown & Ogdensburg.

This company has nearly completed in its car shops at Rome, N. Y., two new baggage cars and five first-class passenger coaches, which are said to be very fine specimens of work.

Baltimore & Ohio.

The Baltimore *Gazette* of April 27 says:

"In the United States Circuit Court yesterday the jury rendered a verdict in favor of the National Union Bank against the Parkersburg Branch Railroad Company for $9,875, being at the rate of $12 per share of the stock of the company. The court in its instructions to the jury the previous day named that sum as being the value of the stock at the time the suits were instituted. The remaining cases against the company was then taken up, and on proper proof of claim, verdicts were rendered in favor of the plaintiff, the amounts awarded being as follows: F. W. Bennett, $37,959.32; the Resolute Fire Insurance Company, $12,665.60; the Baltimore Permanent Building and Land Society, $11,620.70; P. G. Sauerwein, $3,166.40; John A. Nichols, $5,224.56; the National Mechanics' Bank, $12,665.60, and Dixon Gough, $1,773.18; total, $94,750.30. The case of Thos. S. Rhett was entered off, having been settled by private arrangement, as in the cases of Joseph Tome and others, who received $6 per share. All the cases against the Parkersburg Branch Railroad company are now disposed of."

The suits were to recover on stock fraudulently issued by former officers of the company, and which the company refused to recognize.

Central, of Iowa.

The bondholders' committee has issued a circular requesting bondholders to authorize the committee to take action in the matter of the removal of the present trustee (the Farmers' Loan & Trust Company of New York), which, under the terms of the trust deed, can be done by a majority of the bondholders. The grounds alleged for this action are that the trustee has acted with a small minority of the bondholders in opposition to the wishes and interests of the majority; that it carelessly permitted the issue of bonds on 32 miles of uncompleted road, and that the mortgage was not properly recorded until after default in interest was made. The main ground of complaint is the failure or refusal to co-operate with the committee representing the bondholders.

Dividends.

Dividends have been declared by the following companies:

Boston & Albany, 5 per cent., semi-annual, payable May 15.

Boston, Concord & Montreal, 3 per cent., semi-annual on the preferred stock, payable May 15.

Cedar Rapids & Missouri River, 1 per cent., quarterly, payable May 1.

Pullman Palace Car Co., 2 per cent., quarterly, payable May 15.

Rockland, Rock Island & St. Louis.

The auditor reports earnings as follows for February:

Passengers.....	$19,471 51
Freight.....	42,091 49
Express, mail, etc.....	2,662 05
Total earnings ($219 per mile)	$64,225 15
Working expenses.....	$42,554 91
Track rentals, repairs of track, etc.....	17,381 01
Total expenses (92.92 per cent.).....	59,935 92
Net earnings ($15 per mile).....	$4,289 23

A new company has been organized under the name of the St. Louis, Rock Island & Chicago by Mr. Osterberg and his associates, the purpose being to purchase and work the road.

Missouri, Kansas & Texas.

The St. Louis *Republican* of May 1, says: "By order of Judge Dillon the Receiver of the Missouri, Kansas & Texas Railroad was required to pay over to the American Bridge Company the

amount due for building the Boonville bridge. The sum, amounting to over $175,000, was paid yesterday by Col. A. D. Jaynes, the Treasurer of the road, to H. A. Rust, of Chicago, Vice-President of the American Bridge Company, who came down to receive the cash.

"A clear title to the ownership of the bridge now passes to the railroad company."

Little Rock, Mississippi River & Texas.

Surveys are being made for a new location of the Chicot & Pine Bluff Division for some miles from the river terminus at Chicot, Ark., the object being to secure the track from the frequent damage by flood to which it is now subject.

Frankfort, St. Louis & Toledo.

The Kokomo & Marion and Marion & Ottawa companies have been consolidated with the Frankfort, St. Louis & Toledo, the name of that organization remaining unchanged. The capital stock is to be $1,250,000. None of the companies own any completed road.

St. Louis, Albia & Des Moines.

An agreement has been concluded between this company and the Missouri, Iowa & Nebraska. That company agrees to furnish iron and equipment, to operate the road, to build the bridges over Chariton, Cooper and Hickory rivers, and to subscribe $10,000 to the stock. The St. Louis, Albia & Des Moines is to grade and tie the road, to build all the smaller bridges and culverts and to issue its bonds to the amount of $8,000 per mile to the other company. The road is to extend from the Missouri, Iowa & Nebraska at Centerville, Ia., to the Central of Iowa at Albia.

Paris & Danville.

Regular trains began running through to Lawrenceville, Ill., April 24, the track to that point having been laid several months ago. Trains now run over the whole length of the road from Paris to Lawrenceville, 102 miles, connecting with the Ohio & Mississippi at the latter place.

Little Rock & Fort Smith.

The grading on the extension of this road is now well advanced and tracklaying is in progress. The rails are laid seven miles beyond the late terminus at Ozark, Ark., and the work proceeds steadily. The bridge over Big Mulberry, 15 miles beyond Ozark, was completed last week. It is in two spans of 115 feet each.

Meetings.

The following companies will hold their annual meetings at the times and places given:

St. Louis, Alton & Terre Haute, at the office in St. Louis, June 5, at 3 p. m.

Chicago & Northwestern, at the office in Chicago, June 1, at 1 p. m.

New York Central & Hudson River, at the office in Albany, N. Y., June 7. Transfer books will be closed from May 6 to June 8.

Chicago, Milwaukee & St. Paul, at the office in Milwaukee, Wis., June 5, at noon. Transfer books will be closed from May 19 to June 22.

Keokuk & Des Moines, at the office in Keokuk, Ia., June 1, at noon.

Illinois Central, at the office in Chicago, May 31, at 1 p. m. Transfer books will be closed from May 16 to June 3.

Ashuelot, in Keene, N. H., May 9.

Cheshire, in Keene, N. H., May 10.

Manchester & Keene, in Keene, N. H., May 17.

Wisconsin Central.

On the branch from Stevens Point, Wis., to Portage, the grading parties are at work between Colona and the Fox River. The ties and rails are nearly all on hand, and tracklaying will be resumed next week.

St. Paul, Stillwater & River Falls.

A company by this name has been organized to build a railroad from Hudson, Wis., southeast about 15 miles to River Falls. It will be an extension of the St. Paul, Stillwater & Taylor's Falls road and will probably be operated by that company.

Northern Pacific.

Regular trains are now running over the Dakota Division rom Fargo to Bismarck, making three trips a week each way.

East Berlin Branch.

At a letting held in Hanover, Pa., April 27, the grading and masonry of this road was given to Messrs. B. B. Gowder & Sons, of Strasburg, Pa. Most of the grading is light except a section at Abbottstown, on which there is over 70,000 cubic yards of earth and rock, also two large arch culverts under a heavy embankment. The road will be about six miles long and will connect the Hanover Junction, Hanover & Gettysburg road with East Berlin, Pa.

Milwaukee, Lake Shore & Western.

At a public meeting held recently in Appleton, Wis., it was voted to approve a proposal made by this company and to aid in the extension of the road to New London. The minority opposed to granting aid was, however, a large and very decided one.

Rock Island & Mercer County.

This newly organized company purposes building an extension of the Coal Valley Railroad from Milan, Ill., southward about eight miles to Richland Grove in Mercer County. The capital stock is to be $150,000, and the corporators are the owners of the Coal Valley road.

St. Louis, Rock Island & Chicago.

A company by this name has been organized for the purpose of taking the Rockford, Rock Island & St. Louis road from the purchasers at the foreclosure sale and operating it. The capital stock is fixed at $3,000,000. The corporators are John M. Gould, Charles H. Deere, Edward D. Sweeney, W. C. Brewster, Lorenzo Schricker, George Skinner, Walter Trumbull, Heyman Osterberg, some of them being now connected with the road.

Buffalo & Jamestown.

The New York Supreme Court, General Term, has sustained the action of the Commissioners of the town of Ellicott, N. Y., in refusing to pay over to this company the bonds which that town subscribed to the road. No infringement of contract on the part of the company was alleged, but the delivery of the bonds was refused without any specified reason.

Denver & Rio Grande.

It is proposed to build a branch from Cucharas, Col., to the San Luis Valley; also one about five miles long from the present Southern terminus at El Moro to the coal mines of the Trinidad Coal & Coke Company.

Toronto & Nipissing.

This company is trying to dispose of $200,000 of its 8 per cent. mortgage bonds having five years to run.

Texas Transportation Company.

Work is now actively in progress on the railroad of this company, which is to be seven miles long, from Houston, Tex., to Buffalo Bayou at the mouth of Sims' Bayou. At Sims' Bayou extensive wharves and storehouses have been begun, and there is to be located the landing-place of the Morgan lines of steamers. The dredging out of the channel of Buffalo Bayou to admit the passage of these steamers is now nearly completed. The transfer of the steamer landing from Galveston will probably be a considerable injury to that city and to the Galveston, Houston & Henderson road, for the Morgan steamers form the principal connection between Galveston & New Orleans.

Lafayette, Muncie & Bloomington.

The United States Circuit Court has appointed James H. Howe, of Kenosha, Wis., as commissioner to examine into the existing troubles between the Indianapolis, Cincinnati & Lafayette and the Lafayette, Muncie & Bloomington, as to the entrance of the latter road into Lafayette. Mr. Howe was formerly General Manager of the Chicago & Northwestern.

Mineola & Sulphur Springs.

It is proposed to build a narrow-gauge road from Sulphur Springs, Tex., southward about 36 miles to Mineola, where it would connect with the Texas & Pacific and a branch of the International and Great Northern. A number of meetings have been held along the line, and a considerable amount has already been subscribed.

International & Great Northern.

The grading of the extension from Rockdale to Austin, Tex., is being pushed forward, and a large force is employed. There is now 40 miles under contract out of the 59 required to reach Austin. The company has asked the city of Austin to give right of way and depot grounds, and offers, if they are granted, to complete the line to Austin in September next The city has agreed to do that.

Indianapolis, Bloomington & Western.

The Illinois Circuit Court has made an order authorizing the Receiver to buy 500 box cars at $485 each, to be paid for in monthly installments; also to begins negotiations for the purchase of 10 new engines in the same way. The present contract with the Peoria & Springfield road for the use of that road between Pekin and Peoria was approved.

Subsequently, on behalf of the Farmers' Loan & Trust Company, trustee, a motion was made to dismiss the original bill in the suit, which was filed by M. C. Turner and others, and to let the cross-bill filed by the trustee stand. This motion was overruled by the Court, whereupon another was made to remove the case to the United States Circuit Court. The Court took the last motion and reserved its decision.

Valley, of Virginia.

As previously noted, the Baltimore & Ohio Company surrendered possession of this road and withdrew its equipment May 1, and no trains are now running. The committee appointed for that purpose succeeded last week in negotiating an agreement for the lease of the completed section of 26 miles, from Harrisonburg to Staunton, to the Shenandoah Valley Company, at a rental of $20,000 annually and one-half the net earnings. The Shenandoah Valley Company is a corporation which has partly graded a line up the valley through Charlestown and Front Royal, and has always been regarded as a rival to the Valley Company, and in the Pennsylvania interest. None of its road is completed, and no work has been done on it for some time past.

At the meeting of the Valley board of directors to consider this lease, however, it was resolved to refer it to the stockholders at the meeting to be held May 30. The Shenandoah Valley Company subsequently withdrew its offer to lease and the road is likely to remain closed for a time. The rental named appears extravagant for the short section of road completed.

Continental.

This company has for some time past been supposed to be practically dead, but a notice appears in the Philadelphia papers to the effect that a meeting of the stockholders will be held at the office, corner Twentieth street and Montgomery avenue, Philadelphia, May 12, at 10 A. M., to consider the propriety of authorizing a mortgage on the road.

Indianapolis, Cincinnati & Lafayette.

This company recently concluded a contract for 15 miles of steel rails to be used in renewals of track.

Cincinnati & Terre Haute.

A party is engaged in locating an extension of this road from its present terminus at Markland, Ind., southeast to Worthington on the Indianapolis & Vincennes road. The distance is about 15 miles.

Parsons & Memphis.

This lately-organized company purposes building a railroad from Parsons, Kan., eastward to Brownsville, the present terminus of the Memphis, Carthage & Northwestern road, a distance of 37 miles.

St. Louis, Keokuk & Northwestern.

Track has been laid from Louisiana, Mo., northwest 12¼ miles. The extension from Hannibal to Louisiana was to have been completed by this time, but rain and high water have caused much delay, and it will probably be several weeks before trains can run through.

Valley, of Ohio.

An effort is to be made to secure the capital necessary to complete this road. A party of officers of the company, with the representative of an English banking firm, and others, recently passed over the line from Canal Dover to Cleveland. The grading, much of which was done two years ago, was found in better condition than was expected.

Cairo & Vincennes.

Green B. Raum and John W. Mitchell, who hold a claim against the company for $20,000, money paid on a bond given to protect property of the company from seizure, applied to the United States Circuit Court recently to enjoin the proposed sale of the equipment under a chattel mortgage. The court refused to enjoin the sales, but granted a rule to show cause why the claim should not be admitted.

The sale of the equipment took place as advertised, April 28. It was made to satisfy a chattel mortgage given to Drexel, Morgan & Co., of New York, as security for some $80,000 advanced to build the inclined plane and transfer arrangements at Cairo.

Kansas Central.

The Leavenworth (Kan.) *Times* says that this company has completed an arrangement by which means can be secured to extend the road from its present terminus at Holton, Kan., westward about 160 miles, provided local aid to the amount of $4,000 per mile can be secured.

Philadelphia & Reading.

This company is completing arrangements by which it expects to be able to furnish transportation for 80,000 persons daily, if necessary, to and from the Centennial grounds. An additional track has been laid between Belmont and the Falls of Schuylkill, a connection has been made between the Richmond and Norristown branches and a new station, named Bellevue, established. A connection has also been made at Nicetown between the Germantown and Richmond branches, and a double-track connection made between the main line and the Junction Railroad at Belmont.

About 100 new passenger cars and five or six new engines are being built at Reading. The cars are first-class in every respect as to construction and material, except that the interiors will not be so elaborately decorated as the first-class coaches now in use on the main line. The company already own about 400 locomotives, and owing to the dullness of the coal trade they will be able to detail any number that may be required.

It is the intention of the company to run 48 extra Park trains daily to and from Broad and Callowhill streets, 47 from Ninth and Green, 43 from Richmond, 6 from Germantown and 6 from Norristown, thus making 125 trains daily from various portions of the city of Philadelphia to the Centennial Grounds. In addition to these extra trains will be run on the main line from Reading and Pottsville as circumstances may require.

Baltimore, Chesapeake & Delaware Bay.

At the last session of the Maryland Legislature this company secured the passage of an act authorizing the city of Baltimore to indorse its bonds to the amount of $600,000. An application will be made to the city authorities shortly. The road is to extend from Queenstown, Md., on Chesapeake Bay, which is to be connected with Baltimore by steam ferry, eastward 33 miles to Harrington, Del., where it will connect with the Delaware and the Junction & Breakwater roads. A part of the plan is the establishment of a coal depot at Lewes, the terminus of the latter road.

St. Louis & Southeastern.

A meeting of the consolidated mortgage bondholders has been called by the committee, and will be held at the office of Miller, Peet & Opdyke, No. 20 Nassau street, New York, May 18, at 2 p. m.

New York, Boston & Montreal.

This company's property is about to go to pieces, the underlying first mortgages on the various roads which made up the consolidated line being in process of foreclosure. A decree has been granted on the former New York & Boston road, and that part of the line will be sold at public sale in White Plains, N. Y., May 9. A decree of foreclosure has also been granted under the first mortgage of the Dutchess & Columbia road. That road has been for some time in the hands of a separate receiver, and worked as a separate road. The Harlem Extension road is now worked by the Central Vermont Company under a temporary lease. The only property remaining upon which the holders of the New York, Boston & Montreal consolidated bonds have a prior claim is the partly graded line of what was originally known as the Putnam & Dutchess road, which was to connect the New York & Boston and the Dutchess & Columbia divisions. The branch to Albany and the connection between the Dutchess & Columbia and the Harlem Extension roads were surveyed, and some right of way secured, but little or no work was ever done on them. The amount of consolidated bonds negotiated in England was said to be $6,250,000, for which there is now very little to show. Consolidated bonds were to be exchanged for the various divisional bonds, but the arrangement was never completed.

Sunbury & Lewistown.

The purchasers of this road at the last sale met in Philadelphia and organized a new company. The road will be put in good repair at once and trains will be put on by the middle of May. The road is about 43 miles long, from Lewistown, Pa., east by north to Selinsgrove. It has not been worked since Jan. 1, 1875.

Louisville, Cincinnati & Lexington.

Mr. Wm. Mahl, Auditor, reports for March as follows:

Passenger receipts		$34,831 93
Freight		39,352 99
Express, mail, telegraph and miscellaneous		6,571 92
Total receipts		$80,756 84
Ordinary operating expenses	$56,809 68	
Renewal of ties and rails	8,729 32	
		65,539 00
Net earnings		$15,217 84
Construction and improvements	$2,627 45	
Rentals and guarantees	5,129 56	
State tax	1,267 50	
		9,024 51
Net profit for month		$6,193 33

The expenses and renewals were 81.16 per cent. of the gross earnings.

Iowa Pacific.

The following notice, signed by J. K. Graves, President, and dated April 27, is published:

"Caution. All persons are hereby warned not to purchase bonds issued by the Iowa Pacific Railroad Company of Iowa and forwarded by them to Europe for negotiation.

"The contract for the purchase of said bonds was not carried out; yet it seems that in some manner some of said bonds have been put afloat on the market, and are being pressed for sale to brokers and others in New York.

"No value whatever has been paid this company for said bonds, and they are utterly worthless."

Louisville & Nashville.

H. G. Stebbins & Son, of New York, are offering for sale a small amount of the second-mortgage, 7 per cent. bonds of this company, the total issue of which is limited to $2,000,000. The bonds have seven years to run and are offered at 85 and accrued interest.

Kansas Pacific.

It is proposed to extend the Junction City & Fort Kearney Branch from its present terminus at Clay Center, Kan., northwest up the Republican River to Concordia, about 40 miles. The cost is estimated at $600,000, and it is said that the company is willing to build it if the counties interested will give a subsidy of not less than $150,000.

Chicago, Danville & Vincennes.

The offices have been removed to No. 88 Washington street, Chicago.

Pittsburg, Titusville & Buffalo.

The following statement was presented at the annual meeting in Philadelphia, May 1, covering the period from Jan. 12 to March 31:

Earnings of road		$168,845 50
Expenses		114,920 03
Net earnings		$53,715 47
Add assets received from old company		102,011 66
Total		$155,727 13
Paid interest on first-mortgage bonds		72,800 00
Balance, April 1		$82,927 13

The present company took possession of the road Jan. 12.

Montclair & Greenwood Lake.

A circular to the bondholders has been issued by George W. Sandford, of No. 85 Nassau street, New York, in which he asks them to co-operate with him in protecting their interests. He claims that the present management of the company as reorganized is contrary to the true interests of the owners of the property; that the cash balance contributed by the bondholders has been exhausted in construction account and in making up the deficit in operating account, and that $100,000 of the preferred construction bonds are being sold at 85 and the proceeds used up in the same way. It is charged that the managers have procured from the bondholders authority to vote on

all stock not otherwise represented, thereby securing their continuance in office for a year at least from the annual meeting in May; that they are working solely in their own interest and are wasting the money of the company in unwise and unremunerative outlays. He also says that the same parties have been intriguing for a consolidation with the New Jersey Midland, which would be detrimental to both roads, although their failure to secure a majority of the Midland bonds has probably defeated that scheme. The circular concludes by saying that unless a careful and economical management is secured there will probably be a default on the new preferred bonds and new foreclosure. To prevent this it may be necessary to appeal to the courts to protect the interests of the present owners. Though many general charges are made in the circular, no acts are specified and no evidence cited.

Boston & Albany.

After a long and somewhat heated debate on the reports submitted by the committee which investigated the charges against the management of this company, the lower House of the Massachusetts Legislature set aside both majority and minority reports, and passed the following resolution by a nearly unanimous vote:

"*Resolved*, That the Attorney General, with the approval of the Governor and Council, is hereby instructed to take such action and institute such proceedings as he shall deem advisable for the recovery, on behalf of the Commonwealth, of its interest in any moneys or other property belonging to the Boston & Albany Railroad Company, in the hands of any officer, director, agent or employe thereof, or any other person, and for the preservation and protection of the rights and property of the Commonwealth and other stockholders therein; and he is authorized to employ such assistance, legal or otherwise, as he may consider necessary, subject to the approval of the Governor and Council, the expense thereof to be paid out of any moneys in the treasury not otherwise appropriated."

That the Legislature did not intend any very severe censure upon the management is perhaps indicated by the fact that two out of the three State directors were re-elected a day or two after this resolution passed.

The resolution was amended by the Senate so as to throw more censure upon the management, but that body subsequently receded from its amendment, and it passed substantially as given.

White River & Rutland.

The towns of Rochester and Stockbridge, Vt., have already voted to bond themselves in aid of this road, and a town-meeting on the same question will be held in Bethel soon. The length of the line as surveyed from Rutland to Bethel is 37 miles, and the route is said to be entirely practicable.

Missouri, Kansas & Texas.

The United States Circuit Court has made a decree removing Mr. Wm. Bond from the position of Receiver and transfering the road to the Union Trust Company, of New York, as Trustee. This action is taken in accordance with the last agreement concluded between the company and the bondholders. Mr. Bond will continue to have charge of the road as General Manager for the Trustee.

Lone Rock, Dodgeville & Freeport.

A company by this name has been organized to build a narrow-gauge road from Lone Rock, Wis., through Dodgeville to the State line at a point nearly due north of Freeport, Ill.

Springfield, Jackson & Pomeroy.

The contract for the grading and masonry of this road from Bainbridge, O., to Washington, about 25 miles, has been let to J. N. Rucker, of Greenfield, O. The rest of the grading is to be let May 10.

Ulster & Delaware.

The repair shops at Rondout, N. Y., took fire on the night of April 26 and were almost entirely destroyed, the loss being estimated at $20,000, on which there is an insurance of $13,000. It is believed that the buildings were set on fire by some men who had been discharged.

California Pacific.

Arrangements are being made for an extension of the train service of this road over the Central Pacific. The California Pacific trains have hitherto run only to Sacramento, but the night train from San Francisco is hereafter to run through to Reno, Nev., connecting there with the Virginia & Truckee train for Carson and Virginia. This train will be a great accommodation to the Nevada travel.

Separate passenger and freight trains are to be run on the Napa Branch, from Napa Junction to Calistoga, where only mixed trains have been run hitherto.

Walla Walla & Columbia River.

The cheap transportation movement has penetrated even to the far-off region served by this road, for a telegram from Portland, Oregon, says that, at a meeting recently held, the Grangers of Walla Walla County pledged themselves to trade with no merchant who patronizes the railroad in preference to teamsters, or sell to purchasers who ship by railroad; and further pledge themselves to ship all their produce by teams for twelve months unless teamsters charge more than $5 per ton. A committee was appointed to confer with the Oregon Steam Navigation Company or any other company with regard to the construction of another railroad from Walla Walla to Wallula. All the large merchants have signed a paper agreeing to give their freights to teamsters.

Chicago, Rock Island & Pacific.

The Treasurer gives notice that under a clause in the mortgage, 100 bonds of the mortgage sinking fund issue have been drawn for redemption, and will be paid off and retired July 1, 1876, interest on them ceasing from that date. The company is prepared to pay the bonds on presentation at its office in New York, with interest to date of payment. The numbers of the bonds drawn are: 94, 105, 191, 198, 199, 299, 384, 391, 595, 697, 1095, 1197, 1198, 1292, 1294, 1340, 1393, 1491, 1493, 1496, 1708, 1791, 1795, 1892, 1901, 1910, 2101, 2270, 2300, 2699, 2783, 3071, 3092, 3093, 3099, 3103, 3299, 3300, 3398, 3399, 3402, 3410, 3498, 3515, 3602, 3632, 3690, 3699, 3701, 3900, 3904, 4000, 4001, 4096, 4100, 4231, 4295, 4310, 4901, 4494, 4597, 4593, 4794, 4800, 4891, 5055, 5101, 5590, 5598, 5638, 5704, 5710, 6071, 6208, 6331, 6350, 6405, 6510, 6533, 6671, 6817, 7001, 7303, 7305, 7401, 7403, 7502, 7504, 7505, 7620, 7901, 7999, 8030, 8106, 8307, 8394, 8596, 8901, 8902, 8903.

Central Pacific.

The grading of the branch to Ione City, Cal., is completed for 10 miles from the junction with the main line at Galt, and the ties are being delivered. The rest of the grading is being pushed forward. The branch will be about 24 miles long and will, it is said, have considerable local traffic, besides serving some very promising coal mines at Ione.

Portland & Ogdensburg.

To complete the Vermont Division from Johnson to Swanton a considerable amount of money is needed, which the company has not been able to raise by the sale of its bonds. It is proposed for the purpose of raising this money to execute a preferred first mortgage for $500,000 and to issue bonds to that amount. The property is now covered by a joint mortgage executed by the Lamoille Valley, the Montpelier & St. Johnsbury and the Essex County Companies, whose lines together make up the Vermont Division. Under this joint mortgage about $2,300,000 bonds have been issued, and the holders of these bonds are asked to consent to the issue of the preferred bonds, on the ground that they will be benefited and their security improved by the completion of the road. It is said that about three-fourths have already given the desired consent, and it is believed that the others can be persuaded to do the same.

It is understood that the May coupons on the Vermont Division bonds have not been paid and will not be, at present at any rate.

Delaware, Lackawanna & Western—Morris & Essex Division.

The sunken abutment to the new bridge over the Hackensack River is being removed as rapidly as possible. It has been ascertained that the cause of the sinking was not the giving way of the piles upon which the foundation rested, but the use of inferior materials, stone and concrete in the foundation. The failure of the abutment will cause several weeks' delay and considerable pecuniary loss.

Worcester.

This road is now completed to the terminus on Chincoteague Bay, four miles southeast from the late terminus at Stockton, Md. The whole length of the road is 27 miles, from Berlin to Franklin; its general course is south by west from Berlin to Snow Hill, 14 miles, thence nearly due south for nine miles to Stockton and thence southeast to the bay. The stations, with the distances from Berlin are: Poplar, 3 miles; Jackson's, 5; Queponco, 7; Richardson's, 9; Wesley, 11; Snow Hill, 14; Girdletree, 20; Stockton, 23; Franklin, 27.

The road is controlled by the Old Dominion Steamship Company, and is operated in connection with the Junction & Breakwater and the Breakwater & Frankford, of which latter it is an extension. The three roads together form a line extending from the Delaware Railroad at Harrington, Del., in a general southerly direction to Franklin, 81 miles, with a branch 15 miles long from Georgetown to Lewes, from which place the Old Dominion Company maintains a steamship line to New York. The system is well placed for gathering the traffic of the eastern section of the peninsula between the Chesapeake Bay and the Atlantic, a region exceptionally well adapted to fruit and market farming, and also for carrying the fish and oysters from the bays and lagoons of the Atlantic coast. The latter already furnish a considerable traffic.

It is proposed to extend the Worcester road south by west through the southern portion of the peninsula to Cherrystone, Va., near its southern extremity. The necessary authority was obtained from the Virginia Legislature at its recent session.

Rockford, Rock Island & St. Louis.

At the meeting of purchasing bondholders in Frankfort March 21, Mr. Osterberg said that on his return to America last fall, President Walker, on the part of the Chicago, Burlington & Quincy Company, offered him $1,500,000 cash for the road; that on consultation with the Frankfort committee this offer was declined, and that thereafter the Chicago, Burlington & Quincy took a hostile course towards the Rockford road. At this meeting the thanks of the bondholders were tendered Mr. Osterberg by a unanimous rising vote of those present. The committee was unanimously re-elected. Mr. Osterberg gave it as his opinion that the road would easily earn enough in the next 12 or 18 months to pay interest on the 7 per cent. and the new 10 per cent. bonds, and to bring the road into thoroughly good condition. On his motion a vote of thanks was passed to Hon. Lyman Trumbull, of Chicago, who had been the counsel of the bondholders.

The resolutions passed at this meeting are in effect as follows:

The committee is authorized to issue a loan of $260,000, bearing 10 per cent. interest, and payable in four years, having a first lien on the property, for the purpose of raising the money due April 1 (and then paid) to the Court to complete the payment for the purchase made last fall at foreclosure sale. The loan to be offered to the holders of the new first-mortgage 7 per cent. scrip at 90, at the rate of $100 of 10 per cents to $200 of their holdings of 7 per cents, all payments to be made by March 28. Holders of old bonds who had not paid for their proportion of new 7 per cents were given until the 27th of March to do so and thus to share with the other purchasing bondholders.

The *German-American Economist* says that the demand for the new 10s was so great that many applications had to be refused. Mr. Osterberg will return to America to complete the settlement of the affairs of the road. It will doubtless be necessary to organize a new company unless the road is sold. The only liens on the property now, we believe, are the $260,000 of 10 per cent. and $290,000 of 7 per cent. bonds, on which about $53,000 currency interest will be due yearly, requiring net earnings of about $200 per mile, which the road certainly ought to be able to earn.

RAILROAD LAW.

The Illinois Railroad Taxation Cases.

The unanimous opinion of the United States Supreme Court, delivered by Mr. Justice Miller, in the Illinois railroad taxation cases, establishes the following propositions:

First: Neither irregularity in the proceedings, excess in the valuation, nor hardship of the law, if it be constitutional, nor any grievance remediable by a suit at law will authorize an injunction against the collection of taxes.

Second: This rule is founded on the principle that the levy of taxes is a legislative and not a judicial function, and also in the necessity that the taxes, without which the States cannot exist, should be regularly and promptly paid into its treasury.

Third: The same rigid rule would probably not apply to taxes levied by municipal corporations for corporation purposes.

Fourth: No injunction, preliminary or final, can be granted to stay collection of taxes until it is shown that all the taxes really due have been paid or tendered without demanding a receipt in full.

Fifth: The Constitution of Illinois declares in express terms that certain persons and corporations engaged in special pursuits may be taxed by a general law, uniform as to the class upon which it operates, and under this provision a statute is not unconstitutional which prescribes a different rule of taxation for railroad companies from that for individuals.

Sixth: Nor does it violate any provision of the Constitution of the United States.

Seventh: The capital stock franchises, and all the real and personal property of corporations are justly liable to taxation, and a rule that ascertains the value of all this by ascertaining the cash value of the funded debt, and of the shares of the capital stock, as the basis of assessment, is probably as fair as any other.

Eighth: Deducting from this the assessed value of all the tangible real and personal property, which is also taxed, leaves the real value of the capital stock and franchise subject to taxation as justly as any other mode, all modes being more or less imperfect.

Ninth: It is neither in conflict with the Constitution of Illinois nor inequitable that the entire taxable property of the railroad should be ascertained by the State Board of Equalization, and that the State, county and city taxes should be collected within each municipality on this assessment in the proportion which the length of the road within such municipality bears to the whole length of the road within the State.

Tenth: The courts cannot substitute their judgment as to valuation for that of the Board.

Eleventh: The Supreme Court of Illinois having decided that the law complained of in these cases is valid, this court adopts that decision as a rule to be followed in the Federal Courts.

Twelfth: Does it follow that in cases where the proceedings are faulty or illegal, a court of equity will enjoin the collection of the whole tax, when it is obvious that a large part should be paid, and if not paid the complainant would escape taxation altogether? The question is important because the immense weight of taxation rendered necessary by the debts of the United States, of the several States, and of the counties, cities and towns, has resulted very naturally in a resort to every possible expedient to evade its force. It has been repeatedly decided that neither the mere illegality of the tax complained of, nor its injustice nor irregularity, of themselves give the right to an injunction.

The United States has a complete system for the correction of injustice to tax-payers, but there is no place in it for application to the courts until after the tax is paid. An act of 1867 covers this point particularly. This is a wise policy. It is founded on the simple philosophy derived from the experience of ages, that the payment of taxes has to be enforced by summary and stringent means against a reluctant and often advised sentiment. No court of equity will, therefore, allow its injunction to issue to restrain their action, except where it appears that the enforcement of the tax would lead to a multiplicity of suits or produce irreparable injury, or, when the property is real estate, throw a cloud upon the title of the complainant before the aid of a court of equity can be invoked. The court will always incline to require a clear case of equitable relief before it will sustain an injunction against the collection of a tax which is part of the revenue of a State.

But there is another principle of equitable jurisprudence which forbids in these cases the interference of a court of chancery in favor of complainants. It is that universal rule which requires that he who seeks equity at the hands of the court must first do equity. It is clear that the road-bed within each county is liable to be taxed at the same rate that other property is taxed. Why have not complainants paid this tax?

Before complainants seek the aid of the court to be relieved of the excessive tax, they should pay what is due. Before they ask equitable relief they should do that justice which is necessary to enable the court to hear them.

It is a satisfaction that our judgment concurs with that of the State Court, and leads us to the same conclusions. The decrees in all these cases are reversed. The cases are remanded to the Circuit Court, with directions to dissolve the injunction granted in each case and to dismiss the bills.

Utah Railroad Law.

The general railroad law of Utah has been amended so as to allow the consolidation of companies, provided the unanimous consent of the stockholders is obtained in writing. Another amendment provides that the route or termini of a road may be changed by a unanimous vote at a meeting called for the purpose, at which three-fourths of the stock must be represented. Several other amendments make slight changes in the form of proceeding for condemnation of lands; provide that stock shall not be transferable unless all assessments thereon are paid, and impose a fine of $100 for any failure to provide an engine with a suitable bell and to ring the same at all public road crossings.

Chartered Rights—Purchase of a Railroad by Another Company.

In Daniel against the St. Louis, Kansas City & Northern Company the Missouri Supreme Court decided as follows:

1. The North Missouri Railroad Company existed and operated its road under a special charter granted it by the Legislature of Missouri. It mortgaged its road, together with all its privileges, functions and powers—having power so to do. The road, together with its franchises, etc., was sold to foreclose this mortgage, and purchased by one Jessup, who soon thereafter transferred it to the defendant corporation, a corporation organized under the general railroad law of Missouri. *Held*, that the new corporation succeeded to all the rights and liabilities of the former company, and that its rights and liabilities are governed by the former charter, and not by the general railroad law.

2. The 43d section of article 2 of the General Corporation act, (Wagner's Stat., Vol. 1, p. 310) providing for the fencing of railroads, is inconsistent with the previously granted charter of the North Missouri Railroad, and does not affect it.

Condemnation of Lands in Kansas.

In Challis against the Atchison, Topeka & Santa Fe Company, the Kansas Supreme Court held:

1. The title acquired by railroad companies in condemnation proceedings under chap. 124, of the laws of 1864, was an absolute title in fee simple, and not a mere easement.

2. Said chap. 124 is constitutional: for in the exercise of its power to devote private property to public use, the Legislature is the exclusive judge of the degree and quality of interest which are proper to be taken, as well as of the necessity of taking it.

3. Sec. 4, of Art 12 of the Constitution, is not a grant of power to appropriate private property to public use, but a restriction upon the exercise of such power, and the term therein used, "right of way," is not used as defining the quantity of estate to be appropriated, but as meaning the right of passage, irrespective of the estate or title to be acquired.

4. Where in condemnation proceedings under said law of 1864 the full legal notice was given, the affidavit of publication filed in the County Clerk's office correct, and showing due legal publication, the subsequent proceedings all regular.

* * * * * * *

And where the damages awarded to the owner of a certain tract was paid to and accepted by him, and the road actually constructed and in operation through his land, although only a strip of about 20 feet in width was actually occupied by the railroad company, and the balance of the 100 feet strip condemned was used by the previous owner for the same purposes as the remainder of his tract; and where after such condemnation proceedings and payment and receipt of damages, and during such occupation by said railroad company, said owner sold and conveyed the entire tract by warranty deed: *Held*, all the justices concurring, that the purchaser acquired no title to any portion of the 100 feet strip.

ANNUAL REPORTS.

International & Great Northern.

This company owns and works the following lines:

	Miles.
Houston, Tex., north by east to Longview	236.00
Palestine southwest to Rockdale	121.00
Troupe north to Mineola	44.75
Phelps to Huntsville	8.00
Houston southward to Columbia	49.50
Total	459.25

The company was formed by the consolidation of the International and the Houston & Great Northern. The Palestine-Rockdale line is being extended southwest towards Austin and is intended to run through that city and San Antonio to the Rio Grande. The company has a large land grant for the line from Longview through Palestine and Austin to the Rio Grande, the former International road, which was last year accepted in lieu of a grant of bonds made by the State of Texas, but afterwards withheld.

The equipment consists of 40 engines, 25 passenger and 8

baggage, mail and express cars; 661 freight cars of all classes.
The stock and debt are as follows:

Stock ($11,977 per mile)		$5,500,000
First-mortgage 7 per cent. gold bonds	$7,348,000	
Second-mortgage and convertible 8 per cent. bonds	4,816,000	
Total bonded debt ($26,486 per mile)		12,164,000
Bills payable	$32*,789	
Coupons past due	868,745	
Other liabilities	545,763	
Total floating debt ($3,796 per mile)		1,743,297
Total ($42,259 per mile)		$19,407,297

Early in 1875 the company proposed to fund four coupons from the first and eight from the second-mortgage bonds, and this arrangement, we believe, has been generally acceded to. Its object was to enable the company to apply its earnings to the completion of the road to Austin. The annual interest charge is $849,240, of which $514,360 is payable in gold.

The earnings for the year ending Dec. 31, 1875, are reported as follows:

Passengers	$279,356
Freight	1,033,817
Other sources	95,130
Total earnings ($3,067 per mile)	$1,408,303
Working expenses and taxes (56.26 per cent.)	792,340
Net earnings ($1,361 per mile)	$615,963

Payments from income are reported to be for interest on funded debt, $699,350; other payments, $682,620; total, $1,381,970, being $766,007 more than the net earnings of the road.

A considerable increase of business is expected from the completion of the line to Austin, work on which is now in progress.

St. Paul & Sioux City.

This company owns and works a line from St. Paul, Minn., southwest to St. James, 122 miles. It is extended from St. James to Sioux City, Ia., by the Sioux City & St. Paul road, which has the same management and substantially the same ownership.

The equipment consists of 14 engines, 6 passenger and 4 baggage and mail cars; 6 caboose, 193 box and stock and 63 flat cars; one-half interest in a business or pay car. Ten flat cars were built during the year.

The company has a land grant, the amount and condition of which are as follows:

	Acres.
Deeded to company by the State	836,387.92
Certified, but not yet deeded	72,675.62
Due as indemnity for land granted to pre-emptors	20,000 00
In dispute with Winona & St. Peter Company, about	40,000.00
Total	969,063.54

During the year 1875 the sales were 14,078.19 acres for $93,448.15; the receipts on land contracts, $103,587.85. The total sales up to the close of the year have been 152,070.73 acres; cash receipts, $735,970.26. Both sales and collections were retarded by the grasshopper plague of last year.

The liabilities of the company are as follows:

Capital stock ($19,672 per mile)	$2,400,000 00
Preferred stock and scrip ($17,347 per mile)	2,116,319 00
Bills payable	243,518 95
Current accounts	45,242 78
Total ($39,386 per mile)	$4,805,080 73

The assets of the company, exclusive of road and unsold lands, amount to $391,438.65, of which $83,117.39 are in its own securities: $31,114.82 in those of the Sioux City & St. Paul Company, and $183,456.57 in interest bearing land contracts. The preferred stocks are a special charge on the land grant and the income derived therefrom.

The work of the year was as follows:

	1875.	1874	Inc. or Dec.	P. c.
Passenger train mileage	97,740	130,006	Dec.. 32,266	24.8
Passengers carried	62,533	69,747	Dec.. 7,214	10 4
Passenger mileage	2,563,172	2,967,242	Dec.. 404,070	13.6
Freight train mileage	142,519	123,894	Inc .. 18,625	15.0
Tons freight carried	171,306	164,826	Inc .. 6,480	3.9
Tonnage mileage	14,903,647	12,311,263	Inc .. 2,592,384	21.1

Some general averages given in the report are as follows:

	1875.	1874.	Inc. or Dec.
Earnings per train mile, passenger	$1.45	$1.19	Inc .. $0.26
Earnings per train mile, freight	2.94	3.15	Dec.. 0.21
Receipt per passenger per mile	0.0477	0.0461	Inc .. 0.0016
Receipt per ton per mile	0.0279	0.03105	Dec.. 0.00315
Cost per passenger per mile	0.0438	0.0455	Dec.. 0.0017
Cost per ton per mile	0.0172	0.0194	Dec.. 0.0022
Average number of cars per train, passenger	4.75	3.50	Inc .. 1.25
Average number of cars per train, freight	21.20	28.30	Dec.. 7.10
Average number passengers in each train	73	55.8	Inc .. 17.2
Average number tons in each train	125	140	Dec.. 15

The traffic was very evenly divided, the east and west-bound tonnage being about equal. Of the freight car mileage 75.4 per cent. was of loaded cars. Of the total tonnage in 1875, 39.6 per cent. was of wheat and flour, and 30.5 per cent. of lumber.

The earnings of the road were as follows.

	1875.	1874.	Inc. or Dec.	P. c.
Freight	$416,932 64	$382,338 47	Inc .. $34,594 17	9.0
Passengers	122,231 30	136,927 00	Dec.. 14,695 70	10.7
Mails, express, etc	20,850 47	25,924 25	Dec.. 5,073 78	19 6
Total	$560,014 41	$545,189 72	Inc .. $14,824 69	2.7
Working expenses	384,069 62	393,318 02	Dec.. 9,248 40	2.4
Net earnings	$175,944 69	$151,871 70	Inc .. $24,072 99	15.8
Gross earn. per mile	4,590 28	4,468 77	Inc .. 121 51	2.7
Net earn. per mile	1,442 17	1,244 85	Inc .. 197 32	15.8
Per cent. of expenses	68.6	72.1	Dec..	3.5 4.9

Economy in train expenses has been secured by running only one exclusively passenger train daily, the other being made a mixed train. A decrease in receipts in the early part of the year has been more than overcome by the increase of the last three months.

The road-bed has been fully kept up and 702 tons of re-rolled iron with 50,000 new ties have been laid. In the track between St. Paul and Mendota 420 tons of steel were laid, one half the expense being paid by the Chicago, Milwaukee & St. Paul Company as joint owner.

A summary of the profit and loss account is as follows:

Net earnings		$175,944 79
Rents		2,809 27
Land Department		95,652 35
Personal accounts		49 81
Total		$274,456 22
Taxes for 1874 and one-half of 1875	$17,000 63	
Insurance	4,996 56	
Interest on floating debt	27,996 93	
Dividends on preferred stock	163,266 95	
		213,261 07
Balance		$61,195 15

A contract has been made for 500 tons of steel rails for the renewals of the current year. One new engine and 100 box cars have been contracted for. Work has been begun on the cutting needed to reduce the sharp curve at Rocky Point and to fill in the trestle near by. A considerable increase of traffic is expected, and the opening months of the current year have shown a large increase in earnings.

Grand Trunk.

The report for the half-year ending Dec. 31, 1875, states:

Dec. half of 1874.		Dec. half of 1875.
	The gross receipts upon the whole undertaking, including the Buffalo and Champlain lines,	
£1,127,031	have been	£1,046,348
19,785	Which are reduced by the discount on American currency	22,490
£1,107,246	To	£1,023,858
	Deduct—Working expenses (being at the rate of 79.93 per cent., against 80.42 for the corresponding half of last year)	
890,459		818,408
216,787	Leaving a sum of	205,450
	From this, however, has to be deducted the postal and military revenue due for the half-year to the bondholders	
16,668		16,648
£200,119	Which leaves	£188,802

Applicable for the following payments, viz.:

Interest, etc., paid on lands, temporary loans, etc., etc		£20,270
Atlantic & St. Lawrence lease	£52,537	
Lewiston & Auburn Railway rent	1,849	
Detroit line lease	11,250	
Montreal & Champlain bond interest	12,081	
Buffalo & Lake Huron rent	33,500	
		111,219
1st equipment bond interest		15,000
2nd " " "		15,000
5 per cent. perpetual debenture stock		26,500
Leaving a balance of		362
		£188,801

There has, therefore, been for the past half year no balance available for dividend on the preference stocks, and the above sum of £362, added to the balance from the last account of £1,324, makes a total amount to be carried forward to the next account of £1,686. The operations of the half year have resulted in a diminution of gross receipts (after deduction of discount on American currency) of £83,388, or 7.53 per cent., as compared with the corresponding period of 1874, which has, however, been nearly compensated for by the reductions of £72,051 effected in the working expenses. The net revenue, therefore, has only been reduced by £11,337, having been £205,450 against £216,787 in the corresponding half year of 1874. The charges against the net revenue have been increased as follows:

Interest on lands, temporary loans, etc		£7,500
Leasehold lines rentals		800
Interest on debenture stock	£22,700	
Less interest on mortgage to Bank of Upper Canada extinguished	4,300	
		18,400
Total		£26,700

The loss of net revenue of £11,337 added to this amount makes £38,000, which, with the balance carried forward, equals the balance carried to dividend account in the corresponding half-year in 1874. The decrease in the passenger receipts of £34,693, or nearly 10 per cent. as compared with 1874, has been caused simply by a diminution in the numbers of the traveling public, and is an index of the commercial depression which exists. Such a loss of traffic cannot be completely recouped by reduced train service, as the accommodation afforded to the public cannot be all at once restricted, but the executive were enabled during the half-year to make some reduction in the passenger train miles run. The loss in the freight traffic of £49,070, or nearly 7 per cent., accompanied with an increased tonnage of 58,958, as compared with 1874, is the result of entirely lower rates. The following comparative statement shows the average distance each ton has been carried, and the average rate per ton per mile received since 1872, viz.:

	Tons of Freight.	Average distance carried. Miles.	Average rate per ton per mile. Cents.
31st Dec., 1875	1,070,930	320	1.00
" 1874	1,011,972	328	1.10
" 1873	836,012	285	1.44
" 1872	797,935	278	1.38

The company has therefore received on the average, for moving each ton of freight a mile, 9 per cent. less than in 1874 and 30 per cent. less than in 1873, and had the rates of the latter year been maintained, the gross receipts during the past half-year would have been increased by nearly £300,000, the greater portion of which would have been available as net revenue. The average distance each ton was carried was less than in 1874 by 8 miles, or 2½ per cent., but as the number of tons carried was increased by 5 per cent., the transportation of freight was increased by 3½ per cent. The working expenses amounted to £818,408, or 79.93 per cent. of the gross receipts, against £890,459, or 80.42 per cent in 1874. There has been a decrease under every item of expenditure, except that of miscellaneous expenses, and there was also a special charge against the half-year for a proportion of the loss caused by the fire at Point St. Charles. The reduction is £72,050, equal to 8 per cent. on the working expenses of the corresponding period of 1874, as against a loss of gross receipts of 7½ per cent. The total expenditure for maintenance of way and stations and for renewals was £255,513. Of this amount £38,290 has been charged against capital, and has absorbed the balance remaining out of the sum formerly set aside to assist in relaying the line with steel rails, leaving the charge against revenue account £217,223, or 21.21 per cent., against £217,500, or 19.64 per cent., in 1874. The expenditure charged against revenue account for the whole year 1875 shows a decided economy in this department, as the following figures illustrate:

Expenditure.	1874.	1875.
Half year ending June	£115,879	£65,990
" " December	217,500	217,223
Total for the year	£333,379	£283.21

or a reduction of £50,166.

Up to the end of 1875, 942 miles of main lines and branches had been laid with steel rails, leaving 446½ miles still laid with iron. In addition 17½ miles of sidings and switches have also been laid with steel.

In the Locomotive Department the expenses were £262,912, or 25.69 per cent. of the gross receipts, against £294,290, or 26.58 per cent., in 1874, showing a decrease in expenditure of £31,377. The principal decreases were in wages, £5.147, and in fuel, £16,573. The reduction in the latter item was principally in the cost, as there was a slightly larger quantity used. A very satisfactory feature in the accounts is, that although there has been an increase of 3,140,337 car miles, on 4½ per cent. as compared with 1874, there was a decrease in the mileage of all sorts run by engines of 496,000 miles, or 8 per cent. The executive have been enabled to make this important economy of engine power, partly by the increased capacity of the new engines supplied on the change of gauge, which have hauled a larger number of cars to a train, but in a great measure it is one of the results of the change of gauge itself, which has reduced greatly the amount of shunting required at junctions and stations; the decrease of engine miles under this head being 203,000 miles. The expenditure in the Car Department has been £70,527, or 6.89 per cent. of the gross receipts, against £83,215, or 7.52 per cent., in 1874, resulting in a decrease of £12,688. The cost of repairing and renewing cars was 0.496 cents against 0.613 cents per car mile, and 8.19 cents against 9.74 cents per train mile in 1874. The traffic expenses were £203,916, or 19.90 per cent. of the gross receipts, against £229,-60, or 20.75 per cent. in 1874, showing a decrease of £25,844, or 11.25 per cent. in traffic expenses, against a decrease in the gross receipts of 7.53 per cent. With two slight exceptions, there has been a reduction in every item.

This important reduction has been made in the face of an increase of 59,000 tons of freight carried and of 3,140,000 car-miles run during the half year, and would appear to warrant the statement that every effort is being made by the executive to reduce expenditure. The expenditure under the head of general charges was £18,523, or 1.81 per cent. of the gross receipts, against £18,565, or 1.68 per cent., in 1874, showing a decrease of £42, but which, owing to the loss of gross receipts, reaches a higher percentage than in the corresponding half year of 1874.

The rent of rolling stock has been £10,981, or 1.06 per cent. of the gross receipts, against £14,700, or 1.32 per cent., in 1874. The decrease has amounted to £3,719, and has been entirely brought about by the care of the executive to use to the fullest extent the rolling stock of the company. In the tolls paid there has been a reduction of £2,456, which includes the rent formerly paid for the Toronto station, now owned by the company, and the reduction of the interest paid on the International Bridge capital, brought about by the repayment of bonds on 1st July last. The receipts in the United States currency were $3,487,000, of which $837,500 was converted into gold, entailing a loss of £22,489, against £19,785 in 1874, being an increase of £2,704.

In reviewing the events of the whole year of 1875, the proprietors cannot fail to observe that the company has passed through a period of great difficulty and anxiety. Up to the close of 1874 the gross receipts had shown uniform improvement, even when the traffic of neighboring lines was showing, in diminished receipts, the effects of the depreciation of rates; but from the beginning of 1875 and throughout the whole year, the weekly traffic receipts have shown nearly continuous decreases. The loss of gross receipts from all sources during the year has been £190,000, or an average of £3,650 per week; as this loss was caused entirely by lower rates, the company have been compelled to do an increased business at a lower rate of remuneration. In thus referring to the events of the year 1875 it is satisfactory to be able to point out that some improvement is now manifesting itself in the affairs of the company. Since the close of 1875 down to the present time, there has been a substantial addition to the gross receipts; the freight rates are on the whole somewhat higher, and the supplies of fuel and other stores for the years 1876-7 are being now obtained at still further reductions.

The Lake Shore Report of Car-Wheel Mileage.

The Lake Shore & Michigan Southern Railway—Report of Miles Run by all Engine, Tender and Passenger Equipment Wheels removed during the year ending Dec. 31, 1875.

33 INCH.

Make.	Wheels.	Cause of removal.	Total.	Greatest.	Least.	Average.	General average.	New wheels put under
A	967	Worn out	48,099,954	151,895	3,425	49,741		
"	293	Broken tread	6,565,992	48,769	1,161	24,920		
"	33	Flat—bad chill or crumbled tread	804,329	49,444	525	25,135	43,190	1,825
"	1	Sharp flange	4,513	4,513	4,513	4,513		
"	32	Broken plate	480,979	36,474	468	15,031		
B	196	Worn out	10,939,059	164,998	8,795	56,026		
"	39	Broken tread	818,815	48,969	2,045	20,995		
"	2	Flat—bad chill or crumpled tread	100,933	54,109	32,715	33,644	50,048	635
"	20	Broken plate	503,082	49,619	1,999	25,154		
C	124	Worn out	5,606,532	192,789	8,916	45,214		
"	6	Broken tread	147,580	47,000	2,751	24,596		
"	13	Flat—bad chill or crumbled tread	352,575	43,536	5,988	27,121	43,719	187
"	2	Broken plate	87,644	43,822	43,822	43,822		
D	101	Worn out	5,818,136	101,484	24,369	57,605		
"	15	Broken tread	465,685	48,777	2,016	31,046		
"	1	Flat—bad chill or crumbled tread	31,323	31,323	31,323	31,323	52,434	343
"	6	Broken plate	134,326	48,970	4,222	22,588		
	1,810		80,949,255				44,723	2,789

30 INCH.

A	595	Worn out	27,338,027	180,967	2,400	45,948		
"	4	Broken tread	102,305	35,851	21,167	25,576		
"	176	Flat—bad chill or crumbled tread	4,591,822	59,415	3,411	26,090	40,720	340
"	32	Sharp flange	867,622	59,776	13,918	27,113		
"	3	Broken plate	90,812	33,789	23,234	30,271		
B	204	Worn out	10,597,430	98,904	6,617	49,006		
"	11	Broken tread	262,111	35,476	8,544	23,828		
"	106	Flat—bad chill or crumbled tread	3,155,645	59,956	6,462	29,770	36,324	596
"	28	Sharp flange	889,288	59,622	11,384	31,046		
C	128	Worn out	5,328,791	100,196	10,223	41,631		
"	1	Broken tread	11,900	11,900	11,900	11,900		
"	102	Flat—bad chill or crumbled tread	3,377,987	59,480	6,842	33,313	33,290	235
"	4	Sharp flange	104,514	36,723	15,534	26,128		
D	17	Worn out	690,300	80,908	19,411	40,606		
"	10	Flat—bad chill or crumbled tread	276,846	34,075	15,830	27,685	34,551	6
"	1	Broken plate	279	279	279	279		
	1,482		56,637,660				38,217	1,767

28 INCH.

A	97	Worn out	4,679,069	96,941	9,008	48,238		
"	20	Flat—bad chill or crumbled tread	418,231	39,784	12,155	21,911	42,177	118
"	10	Sharp flange	299,436	35,372	24,186	29,943		
"	2	Broken plate	44,090	23,045	23,045	22,045		
B	93	Worn out	3,269,951	75,431	11,738	36,161		
"	4	Broken tread	137,024	54,256	34,256	34,256		
"	19	Flat—bad chill or crumbled tread	563,714	37,463	18,685	29,617	33,680	188
"	12	Sharp flange	339,910	36,100	14,230	28,326		
C	48	Worn out	2,805,564	76,308	1,391	54,282		
"	1	Broken tread	12,234	12,234	12,234	12,234		
"	29	Flat—bad chill or crumbled tread	734,271	36,269	6,944	25,320	43,566	75
"	1	Sharp flange	12,234	12,234	12,234	12,234		
D	4	Worn out	176,918	48,502	33,140	44,101	40,454	
"	1	Sharp flange	25,866	25,866	25,866	25,866		
	341		13,316,905				39,082	376

26 INCH.

B	2	Flat—bad chill or crumbled tread	64,280	32,140	32,140	32,140	32,140	A 2 6
C	5	Worn out	233,000	53,304	41,131	46,600	27,020	16
"	11	Flat—bad chill or crumbled tread	199,467	34,511	8,424	18,133		
D	5	Worn out	172,950	44,451	25,886	34,591	34,373	2
"	2	Flat—bad chill or crumbled tread	67,656	33,828	33,828	33,828		
	25		737,356				29,494	28

Average mileage made by 33-inch wheels removed for two years, 46,443.
" " " 30-inch " " " " 41,196.
" " " 28-inch " " " " 37,405.
" " " 26-inch " " " " 31,790.

A. C. ARMSTRONG,
General Purchasing Agent.

Office of General Purchasing Agent,
Cleveland, Jan. 1, 1876.